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Vol. XXIX.] [Part I.

JOURNAL OF THE STATISTICAL SOCIETY,

MARCH, 1866.

MORTALITY *of* CHILDREN *in the* PRINCIPAL STATES *of* EUROPE.

By WILLIAM FARR, ESQ., M.D., D.C.L., F.R.S.

[Continued from p. 149, vol. xxviii.]

[Read before the Statistical Society, December, 1865.]

WORDSWORTH, with the insight of a great poet into life, has said truly: "The Child is father of the Man." Unless the child survive the perils of childhood, the man cannot exist; and while existence endures, it retains in the poet, the soldier, or the labourer, ineffaceable traces of the conditions of childhood.

I have to ask you now to fix your attention upon the children of Europe under *five* years of age. Some of them are in swaddling clothes, only capable of sucking or uttering inarticulate cries; others are active intelligent boys and girls, such as you see mustered in infant schools. They are helpless and dependent. They consume and are unproductive; they are of no occupation; so in the eyes of an economist of the old school they are worth nothing.* Yet they fill a large space in the affections of mankind: they exist in millions: the little children of our day will be the soldiers, sailors, workmen, parents, of the generation to come; and the torch of industry can only be transmitted through their hands to future ages.

We may then well inquire with some anxiety, what is now the condition of children in the principal States of Europe?

This is a large subject. We may endeavour to ascertain, with M. Quetelet in Belgium, the height and weight of the children of the several races. We may test their strength, or depict their form in its wide ranges through Holland, England, and Italy.

Their intelligence and passions vary and invite research. But leaving these themes, I have only to inquire here into their mortality; its extent, its causes, and the evils which it reveals, with a view to the discovery of remedies.

It is well known that a large and variable proportion of children die in the first five years of age; and that while in certain conditions they nearly all survive, in other conditions they nearly all perish.

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* See estimate of the money value of a man at different ages, in vol. xvi, pp. 43—4, of the *Statistical Journal*.

On like conditions the lives of animals depend. The young of some vertebrate animals are able to run about shortly after birth, and to a certain extent to take care of themselves. Among birds, we have chickens and ducklings at home almost as soon as they are born; the young of thrushes, sparrows, pigeons, and ravens, naked and defenceless, are nurtured with warmth and food by the parent birds. While colts, calves, lambs, pigs, and kids, run about; kittens and whelps are born blind. But in all cases the affection and intelligence of the parents prove equal to the occasion, either in the wild or domestic species.

So it is, as a rule, in the supreme race of the world. The boy is no sooner born than he begins to breathe, while his arterialized blood circulates through his limbs and lungs; his body is cleansed and clothed and warmed; he is supplied with food at his mother's breasts, and nursed in her arms. The umbilical cord is tied; the breathing, if it sometimes pauses, is excited. The circulation and the breath are easily stopped; a few drops of laudanum are fatal; so is exposure to severe cold, and so is privation of food. The child may be prematurely born; or be left by his lost mother without milk, helpless, to the care of strangers. The frame may be deformed or diseased, and ready for dissolution. In many of these cases death is inevitable.

It must be evident, from all these considerations, that the life of the infant in its first year of age is almost indissolubly bound up with the life of the mother, and to a certain extent with that of the father, from whom the means of living are derived. Night and day the infant requires tendence; if the poor mother, therefore, is taken from home habitually, to work either in the field or the factory, and the rich mother is absorbed by the claims of society, the infant is in either case neglected and partially abandoned.

Marriage is not only a sacred bond of perpetual love, but a compact between husband and wife to fulfil the contingent duties of father and mother. The child is thus insured, to a certain extent, protection during the longest of two lives. In consequence, however, of crime, vice, drunkenness, illness, ill-fortune, or bad times, the parents of large families especially are reduced to extremities, in which their children inevitably suffer the want not only of the comforts, but of the necessaries of life. Such is the fate of many children born in wedlock.

The number of children born in any country out of wedlock is not exactly known, but it is considerable and variable. They have parents in all classes of society, and some great men in history have been bastards; but bastards have generally been ill-treated, and even in the present day of dawning humanity, are visited bitterly for the sins of their fathers and mothers. Their mothers seldom greet them; their fathers are inclined to desert them. The chastity of women is the foundation of society, and its loss is punished by public opinion; so there is a natural tendency to conceal illegitimate births. Childbearing interferes with a life of illicit pleasure; and mistresses, prostitutes, and profligate wives, often find their children in the way. Thackeray has incarnated these women with exquisite truth in Becky Sharp. Yet, truth compels us to say, that passion and affection for children are also found coexisting in the same breast. As races of men who destroy their children die out in the presence of races who cherish their offspring, so there is a natural and inexorable elimination of the bad and imperfect specimens of good races.

Illegitimate children, for various reasons are almost exclusively the victims of infanticide. And it is chiefly for their succour that foundling hospitals have been erected in the Catholic States of Europe. I shall return to this subject; but it is clear, upon the most cursory survey, that while cases of infanticide figure in the criminal returns of every civilized State, the number of deaths from that crime is inconsiderable in comparison with the numbers of untimely deaths from other causes.

The last number of the *Journal* contains, in an extract from the Supplement to the Registrar-General's 25th Annual Report, "Returns of the Mortality among Children under Five Years of "Age." I have discussed in that Supplement the mortality and the causes of death; the tables displaying the several causes of death in childhood in each of the 631 districts of England and Wales. (*See Journal*, vol. xxviii, pp. 402—13).

Unfortunately we have not yet got similar data for any other State; but, restricting the inquiry to the simple question of mortality, I shall be able to submit to you a tolerably accurate view of the loss of young lives in Europe during recent years.

The data will appear in the *Journal*, and some of them are on the wall. (See Tables pp. 29 to 35.)

In the first place, let us ask how many children out of 1,000,000 born alive, see their fifth birthday—live five years?

In the north, there is the fine free population of Norway, scattered over the habitable parts of a large well-watered territory, in some parts fruitful or covered with pine forests, in other parts sterile: in addition to fish in their waters and agricultural produce, they derive profits from timber, mines, and ships. The climate is severe, but on the western Atlantic slope the severity is softened by the Gulf Stream. In some of its features we are reminded of Scotland.

Out of 100 children born in Norway, 83 attain the age of 5 years; in Sweden 80; in Denmark 80, including Schleswig and

Holstein down to the Elbe, the country of the Angles of old; in England 74; in Belgium 73; in France 71; in Prussia 68; in Holland 67; in Austria 64; in Spain 64; in Russia 62; in Italy 61.

Thus the chance is always in favour of the life; but here it is 8 to 2, there only 3 to 2.

What is the proportion of *deaths* under the age of 5 out of 100 children that see the light? In Norway 17; Denmark 20; Sweden 20; England 26; Belgium 27; France 29; Prussia 32; Holland 33; Austria 36; Spain 36; Russia 38; Italy 39.

Thus Death, drawing lots for the lives of children, has in one part of Europe 2, in another 4 out of 10 in his favour.

Out of 100 children born in addition to the number 17 dying in Norway, 3 die in Denmark, 3 in Sweden, 9 in England, 10 in Belgium, 12 in France, 15 in Prussia, 16 in Holland, 19 in Austria, 19 in Spain, 21 in Russia, 22 in Italy. Thus in the sunny climate of the south, death carries off two children from Italians for every one he takes in high latitudes from Norwegians.

In all England 26 children under 5 years of age die out of 100 born; but in her healthy districts she loses only 18, nearly the same number as Norway; while in her thirty large town districts,* 36 perish. There is the same contrast between the country and the city as there is between Norway and Italy. In France I find contrasts of the same sort in the departments.

If we turn to particular classes the mortality presents still larger contrasts: according to the peerage records, out of 100 children born alive, 90 survive; 10 die in the first 5 years of age. The deaths among the children of the clergy are nearly in the same proportion.†

The proportions have been reversed in some foundling hospitals.

For reasons which I have explained, the rate of mortality is only exactly determined by comparing the average numbers living with the deaths in a given time. That we can do for eleven of the States of Europe, and Table 3 exhibits the results.

We are able in some States to marshal our little troops in three regiments, the first of babes under 1, the second of children of 1—3, the third of children of 3—5. The mortality is shown in the table.

By the English Life Table, of 100 children born, 15 die in the first year, 5 in the second, 3 in the third year, 2 in the fourth, and

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* Comprising St. Giles, Holborn, East London, St. George-in-the-East, St. Saviour, Southwark; St. Olave, Southwark; St. George, Southwark; Southampton, Yarmouth, Norwich, Salisbury, Exeter, Bristol, Wolverhampton, Birmingham, Leicester, Nottingham, Derby, Liverpool, Wigan, Bolton, Salford, Manchester, Ashton-under-Lyne, Preston, Leeds, Sheffield, Hull, Newcastle-upon-Tyne, and Merthyr Tydfil.

† See authorities cited in Supplement to Registrar General's Twenty-fifth Report, p. xii.

1 in the fifth; making 26 in the 5 years of age. Of the 15 who die in the first year, 5 die in the first month of life, 2 in the second, and 1 in the third.

The *annual* rate of mortality in the first week of life in France is 154 per cent.; and the greater the mortality in any country generally, the greater is its excess in the first days of life.

I am not prepared now to discuss the Causes of the deaths of children in the several States of Europe; but those Causes are necessarily various, and we must be on our guard against assuming that in countries like Italy and Russia, where the rate of mortality is nearly the same, the causes are not very different. The slightest reflection shows us that the death of an infant may be the consequence of any one of a thousand causes.

We know, on the principle of the conservation of force, that the vital force of an animal may be converted into chemical force, heat or electricity, in a great variety of ways. Two groups of causes may be distinguished: in the first group the vital force is converted by the direct application of another form of force, such as a blow, a wound, lightning, fire; in the second group the conversion is the result of diseases which are intermediate transformations.

The causes which have hitherto attracted most attention are forms of human agency, and are known as infanticide and child murder. This crime prevails everywhere to some extent, for a certain number of wretched women of all nations kill or abandon their children. It demands all the vigilance of the magistrate; but I hope to be able to convince you that in the present day it is not in any country the cause of any considerable number of deaths.

I will take our own country in the first instance, as for this crime, and upon our own confessions, England has just been arraigned at the bar of public opinion, by the Abbé Cesare Contini, in the "Journal of the Statistical Society of Paris." The Abbé came over to this country for information. I saw him, and I believe he called upon Dr. Lankester, one of the coroners for Middlesex. He has looked up all our blue books and literature. He quotes passages from the "Times," the "Daily News," the "Morning Chronicle," Dr. Burke Ryan, Mr. Chadwick, the Judicial Returns, the Registrar-General's Reports, and thus concludes:

"If the observation of Dr. Lankester is correct, as to the number "of infanticides not judicially proved, 13,000 children under 7 years "of age perish every year in England by their parents' hands (*des* "*mains de leurs parents*)."

Again: "There exists in England, and particularly in the manu-"facturing districts, a frightful speculation of the parents upon the "lives of their children. It is the reproduction upon a grand scale "of that crime which conferred such sad celebrity on Palmer and

" De la Pommeraye. The parents insure their childrens' lives in " burial clubs."

He then cites the alleged instances of the sacrifice of children insured in these clubs, with the opinions of the Rev. Mr. Clay, Mr. Edwin Chadwick, Mr. Gardner, and Mr. Coppock. We can now add the infamous Winsor case to the Abbé's instances. He brings in the women of Thorpe, where they had formed "*une véritable*" *association, ayant pour objet de se debarrasser, par l'empoisonnement,*" *de leurs enfans et de leurs maris.*" Dr. Hunter's sombre picture of the Marshland women is hung up in the back ground.

Dr. Lankester held inquests on 74 bodies of children found dead in a part of Middlesex where the great railways terminate, and he infers that as many more—that is, 74—escape all inquiry.

The Abbé turns to our criminal statistics, and finds that inquests were held on 6,506 children under 7 years of age: he infers that all these children on whom inquests are held, and 6,506 more, whose bodies, he assumes, never fall under the notice either of the coroners or police, "perish by the hands of their parents!" You will see from this that the Abbé Contini does not understand the nature of the coroner's inquest, which, held in all cases of sudden and violent death, does not in itself imply the suspicion of guilt in any parties. The 1,531 deaths of children under the age of five by "burns and scalds," were certainly not "in great part the work of crime or "*premeditated* negligence."

In all England 180 children under 5 years of age were returned by the coroners under the head of "murder" or "manslaughter" in 1862, when the deaths of 178,511 children under 5 years of age from all causes were recorded: so about 1 death in 1,000 deaths of children is stated to be by murder or by manslaughter,* which it will be recollected excludes the idea of intentional infanticide. Add any reasonable proportion—Dr. Lankester's, or any other estimate—to the ascertained number of infanticides, of child murders, and the numbers of such deplorable cases will still be inconsiderable, compared with the untimely deaths from other causes. I venture to affirm of the countries of the continent—of France, of Italy, and of Spain—where the mortality of children is much higher than it is in England, and we are told nothing of its causes,—that comparatively few children are wilfully killed by their parents.

For the sake of mothers, however, as well as of children, the strictest watch should be kept over the crime of infanticide. Both Mr. Wakley and Dr. Lankester deserve great credit for their exertions, which have saved many children and kept many unhappy women in desperate circumstances from rushing into crime. The coroners of the country deserve all the assistance which public officers or the public can afford; and it would be well if it were made the duty of a health officer to inquire into the cause of every death uncertified by a legally qualified medical practitioner.

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* 133 persons, 5 men, 128 women, were tried in 1864, for concealing the births of infants; 45 were acquitted and 88 were convicted.

The other States of Europe would find some such institution as the coroner's court, in addition to their police, of singular use; and so they would our system of requiring medical certificates of the causes of death.

In England still-born children are not registered; and in France new-born infants who die before registration are recorded as still-born. This defect evidently throws a gate open to crime in both countries. With the practice in other States I am not acquainted.

One word about *burial clubs*, which the Abbé Cesare Contini imagines have been founded in England to give prizes to mothers who kill their offspring. I quite concur in opinion with those who think that the statute is right which makes it unlawful for one person to insure another's life in whose continuance he has no pecuniary interest; and that the burial clubs have been turned to account by criminals. But to kill the child is to rob the club; for the insurance is paid out of the contributions of the members; and it is quite certain that as a speculation a club of infanticides would not pay. It is almost as reasonable to suppose that the members of the Equitable Society insured their lives with the intention of committing suicide, as that the working classes founded burial societies with the intention of committing infanticide.* Surely the respect for the bodies of the dead is a well understood feeling which has actuated men from the earliest ages down to the present day; and in England every person, however poor, is entitled to the religious rites of burial, which are denied to the poor in many other countries. But to be buried at the expense of the parish is held to be a disgrace in those very districts where burial societies abounded; and it was to shield themselves and their children from this disgrace that the people joined these societies.

There will always be a volcanic mass of lunatics and criminals ever and anon breaking out into terrible eruptions of crime; but the area of this mass is limited, and we must not suffer its burning cinders and ashes to withdraw our eyes away from the fair fields of humanity which cover the world.

I have discussed at some length this matter, because it is chiefly upon the working classes themselves that we depend for the preservation of their offspring; as, unless the people are sound at heart, vain are the efforts of governments, of municipalities, of colleges of physicians, and of statistical societies.

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* The Select Committee on Friendly Societies (1854) reported that "the "instances of child murder, where the motive of the criminal has been to obtain "money from a burial society, are so few as by no means to impose upon Par-"liament an obligation, for the sake of public morality, to legislate specially with "a view to the prevention of that crime."

I will, before concluding, set down rapidly a few of the evils which exist in Europe, and which are already known to be fatal to the lives of children, directly or indirectly. While infanticide kills its hundreds, these silent evils put to death myriads.

1. First on the list are the economic wants of the population, partly the result of idleness, illness, inaptitude for work, want of capitalists, want of roads, and want of freedom of trade and of opinion: anything which stimulates and sets free the trade and industry and mind of Europe, will therefore give parents increased means of supplying the wants of their offspring. To improve health will be to add fresh vigour to industry.

2. The largest proportion of the mothers of Europe obtain no skilled help in childbirth; and the existing nurses of the middle classes are defectively educated; hence a considerable loss of life among new-born children. The earlier stages of children's diseases, when medicine is of avail, are almost invariably neglected. The remedy is the creation of a class of medical health officers and nurses well versed in hygiène.

3. Soon after the child is born it requires its mother's milk, and where this fails some judicious substitute. The substitute suitable to each country should be pointed out.

4. The child in the first year requires watching, and as soon as it begins to sprawl about, if not watched, often gets into mischief. To prevent mischief, and to set the mother free, not in England but in many parts of France, Italy, Germany, and other countries, the baby from the first is bound up in bandages, the legs together, and arms by the side, so that it looks a stiff, still, living little mummy, rolling its eyes about, which apparently for want of power rather than will are allowed their liberty. The child can be thrown upon the back, carried under the arm, or, as is at times the case, suspended by a loop upon a hook. This band on every limb is the imperial remedy for the accidental evils of liberty, but it must be ten times as pernicious as the disease.

The *maillot,* as it is called, was eloquently denounced by Buffon and Rousseau, yet you see it frequently on the continent, where it is one cause of the high mortality, and leaves indelible traces on the development of the child. The negro has been emancipated, the serf has been set free, how long is the child to be ruthlessly bandaged in this fashion, which must have descended from ancestral savages of the age of flint instruments? The brutes of the field now know better.

5. The maintenance of large standing armies by conscription

necessarily takes a large portion of the young men from agriculture and industry, who, as they have nothing to do except at parades and reviews, are in the cafés and wine shops instead of the fields and workshops; so you see the sisters and mothers doing the hard work instead of nursing children and keeping their houses in order. The reduction or the employment of the continental armies on productive work, will reduce the mortality of children.

6. English children are not bound hand and foot in tight bandages to keep them quiet, but it is beyond doubt that where the women are taken from home, in some agricultural as well as manufacturing districts, they are drugged with opium for the same purpose; and thus many lives are lost.*

This should be put a stop to at once by law.

7. In our large cities, with scanty house accommodation, without gardens, young children are imprisoned indoors, or only get fresh air and exercise where they are liable to be run over. Open spaces for play in every street, or access under regulations to the squares, would be a boon which both children and parents would appreciate.

8. If the infant schools were well ventilated, they would not so frequently as they are be the channel for the diffusion of zymotic diseases.

9. A large portion of the mortality of children is due to the want of water, or to the use of impure water in which the discharges of the sick suffering from diarrhœa, cholera, typhoid fever, &c., find their way in town and country. A pure water-supply is a vital necessity; so is the abolition of the cesspool—that magazine of all the contagions.

10. The crowding of population in dwellings and in narrow lofty streets excluding sun and wind, is a certain cause of mortality; sometimes generating disease, and always rendering its attacks when introduced from without, more fatal.

11. Ignorance, vice, and drunkenness of parents are fatal in many ways to children. Any measure for the education of adults of the present generation will have an immediate effect on their children.

All these things appear petty and common in the enumeration; but the health of a child depends upon a thousand small cares, each in itself an infinitesimal quantity, in the sum, the condition of life.

I have not said anything about foundling hospitals, which the Abbé Cesare Contini looks upon as arks of safety for children. They are especially, but not exclusively, catholic institutions, and have never thrived in Protestant communities: they have something in them of the secrecy of the confessional. Guido, Pope Innocent III,

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* See Mr. Simon's eloquent denunciation of the "destructive practice of drugging infants with opium."—"4th Report of Medical Officer of Privy Council," pp. 32—5.

Vincent de Paul, and many excellent men as well as women, who founded these hospitals, were animated by excellent intentions; their object was to save children's lives and to put a stop to infanticide. The wretched mothers dropped their babies on the foundling's wheel of fortune (*tour; ruota*) instead of the street. Hitherto the system has worked badly: it was tried and suppressed in London. In France, Italy, Russia, Germany, the mortality in the foundling hospitals has been immense; infanticide has not been diminished by the *tour*. It has an undoubted tendency in great cities to diminish the penalty of unchastity, and to discourage marriage; while it further breaks up the ties of the family by tempting parents not entirely destitute of parental affection to abandon their children.

I beg the excellent Contini to study the tables, drawn from official sources; he will find that the destruction of children is greatest in the countries endowed with the grandest foundling hospitals.

I am not prepared to go to any extreme, and to say that an institution such as the London Foundling Hospital is now, should be suppressed. In society, delicate and often tragic incidents spring up which can be dealt with by no inflexible rule: and it is quite certain that in some cases children can be better educated by strangers than by their own parents. As a Christian community, England professes to take charge of helpless orphans and of destitute young children; but that the treatment which they meet with in workhouses is the best possible, I am not convinced.

There is one peculiarity about families; some married women, apparently in perfect health, bear no children, others bear twenty or more. In the census report of 1851, I estimated the number of childless families* at a million. Now, it would appear to be a better arrangement for the Union to place its orphans under inspection, with an allowance, in the care of wives without children, or with one child, than to keep them within the walls of the workhouse.

And with regard to the whole of the population, it seems desirable to encourage people of means without children to adopt the children of parents who, from need or from any other cause, cannot bring up or educate all their children worthily. These parents by adoption would be often amply repaid for their hospitality to little children. Such families are the only foundling hospitals in which I should be quite willing to confide.

Some simple law of adoption, and the example of the great, would suffice to make the practice popular.

If the subject which we are discussing in this room to-night gain any attention in Europe, as it may, through the statists who have promised to co-operate in the work, many children who, under the present system of treatment are doomed to die young, will live; and this raises two objections which I am bound to notice.

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* Natural families, as represented by husband and wife, by widow, or by widower.

If weakly children are tided over infancy, the result, it may be said, will be an increase of sickly adults and degeneration of race. All breeders of animals throw aside bad specimens. The Spartans did not allow the father to dispose of his child as he thought fit, for he was obliged to take it to the tryers, who, if they found it puny and illshaped, ordered it to be carried to a sort of chasm under Taygetus; of this course Socrates in Plato approves. At Athens and Rome the infant at birth was laid upon the ground, and was abandoned to its fate if the father did not lift his child from mother earth, who was assumed to have claims upon its fragile body.* The Romans were reproached by the Christian fathers for their inhumanity. "Which of you," says Tertullian, upbraiding the Gentiles in rude eloquence, "has not slain a child at birth?" Thus the right of a child to life was questioned at its very threshold, and he only won it after examination. Children were dipped, like Achilles, in cold water to harden, or to kill them, as the case may be.

Through Christianity, through one of the leading races of mankind—the Jews—and through the manly sense of the Anglo-Saxons, we have been led to look upon children in another light, and be they weak or strong their lives are sacred in the eyes of English law. Experience has justified this policy. Great qualities of soul are often hidden in the frailest child. One Christmas day a premature posthumous son was born in England of such an extremely diminutive size, and apparently of so perishable a frame, that two women who were sent to Lady Pakenham, at North Witham, to bring some medicine to strengthen him, did not expect to find him alive on their return. He would inevitably have been consigned to the caverns of Taygetus if the two women had carried him to Spartan Tryers. As it was, the frail boy grew up into Newton, lived more than four-score years, and revealed to mankind the laws of the universe.† If he had perished, England would not have been what it is in the world.

In Paris one evening a puny child in a neat little basket was picked up: he had been left at the church door; the commissary of police was about to carry him to the foundling hospital, when a glazier's wife exclaimed: "You will kill the child in your hospital, "give him to me; I have no children, I will take care of him." She cherished her boy, poor as she was, until some one, perhaps his father, settled a small annuity on his life, with which he was educated at the Mazarin College, where he displayed the early genius of a Pascal: it was D'Alembert, to whom we are indebted for a new calculus, for the grand introduction to the Cyclopædia, and for innumerable physical discoveries. He was offered 100,000 frs. a-year by Catharine of Russia, but refused to leave his mother by adoption —the glazier's wife—and his country.

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* Tollere liberos, de terra tollere, et nutrire atque educare.—FORCELLINI.

† "Newton's Life," by Brewster.

It would be easy to multiply instances, to prove how impolitic it is to take away life on the verdict of the most clear-sighted tryers. How false, then, is the policy of exposing children to those blind tryers, the pestilences which infest infant life in Europe? Let the little strangers have a fair chance; in their respect, "Be given to "hospitality, and you may entertain angels unawares."

Practically, the men who survive out of a great number of unhealthy children are not the best lives. The mortality of the children is an accurate index to the mortality of the whole population. By the law of natural selection, you could only generate a low short-lived type of humanity in bad hygienic conditions.

What have we to say when we are told that Europe will be over-run with population if fewer children are destroyed in infancy? England answers for me: over-run the world. There is room for all the European types in the other quarters of the globe, and Europe itself is still only half peopled.

It is certainly in conformity with Darwin's law, that in the struggle for existence, out of which the improvement of species springs, the race which breeds and educates the greatest number of vigorous, intelligent children, has the best chance of winning and of holding its own. Let all Europe, then, strive for the prize: the English race in these islands, in the northern provinces of America, as well as in the United States, has a firm hold on the earth, and welcomes them as generous rivals in common efforts for the elevation and development of humanity.

NOTE.—I addressed a few queries to statists of eminence in some of the countries of Europe; and I subjoin the answers in their own words. It will be gratifying to English readers to find how clearly their blood relations in Scandinavia and Germany can express themselves in the English tongue. My friend Dr. Stark has favoured me with answers for Scotland; and at a future time I hope to be able to get similar information for England and Ireland as well as for Italy and Spain.

REPLIES TO QUERIES AS TO THE TREATMENT OF INFANTS IN THE PRINCIPAL STATES OF EUROPE.

SCOTLAND: *By* DR. STARK, M.D., F.R.S.E.

Infants under 1 *Year.*

Q. 1. *How are they brought into the world? i.e., are the mothers attended by women or by medical men? Are the women instructed? And if not, what is the mode of procedure with the baby as to umbilical cord, dressing, feeding, covering up, warming, &c.*

A. Before the board of supervision for the relief of the poor existed, in every parish or combination of parishes having a medical officer for the relief of the poor, a full half of the women of Scotland were attended by midwives, or old women acting as such; and even yet it would be within the mark to say that a third of the women of Scotland are still attended by women during their confinement. A *very few* of these women have received regular training as nurses and have attended a course of lectures on midwifery; but such persons are almost quite confined to the towns. Over all the rural and insular districts of Scotland, the women who attend as midwives have had no training, but have been mothers of families, and are usually the most intelligent and *handy* of the women of the parish.

N.B.—In the following statement, it must be understood that what is mentioned as the usual custom applies to at least 80 if not to 85 per cent. of the people of Scotland; the remaining 15 or 20 per cent. belonging to the upper classes, whose customs with reference to the nursing, feeding, and treating of their children do not differ from those of the same class in England.

Whether the child has been assisted into the world by medical practitioners or by midwives, the subsequent procedure is nearly the same everywhere. The umbilical cord is tied firmly with tape about three inches from the navel, and again about six inches, and is then cut through with a pair of scissors between the ligatures. The child is received into a flannel garment, if possible one which belonged to the father, is carefully rolled up in it and given to an assistant who sits with it before the fire, keeping the child on its side to let any fluid escape from its mouth. After the mother is all right, the head of the child is washed with hot water and soap, and a small scull cap of flannel put on. The body is then carefully washed with hot water and soap, and after being dried the umbilical cord is wrapped in a burnt or scorched rag on which butter is often smeared, and a flannel band is pinned round the child's body. If the head is much discoloured or distorted a little whisky is rubbed over it previous to putting on the flannel cap. The navel rag is invariably scorched before being used.

When the child is dressed, it either gets a teaspoonful of castor oil or a little syrup made of brown sugar and water, and, as a general rule, it is not put to the breast till the second or third day after birth, in fact not until the mother's breasts begin to get uneasy, being fed at intervals of three or four hours with the above named syrup. Where medical men attend the child is put earlier to the breast.

With all classes it is known to be essential to the infant to keep it warm. The common practice, therefore, is to heat the child's feet at the fire during the time it is getting the castor oil or syrup, and then lay it in its mother's bosom, where it sleeps all night and every night until it is weaned.

With the upper classes it sleeps at night with the nurse or nursemaid, or in a basinet or cradle in which is a flask of hot water.

Q. 2. *Are the children suckled by the mother? For how many months? Do they get artificial food, and of what quantity and quality?*

A. 80 to 85 per cent. of all children born are suckled by their own mothers. But where the mother has died, or is weakly and has not a sufficient supply of milk, as is too much the case with the upper classes, the child is brought up by a wet-nurse or on the bottle.

As a general rule, when the mother is healthy, no infant gets spoon meat till it is 9 months old or has cut its front teeth. The cutting the teeth is generally recognized as the period when it is safe to give artificial food; and the Scotch generally are aware that spoon meat given before that period is extremely apt to bring on convulsions. It is generally therefore withheld till nine months are completed, when the child is weaned, though, if it be winter, the weaning is delayed till spring, when the child will be from 12 to 14 months old. It is generally recognized that the healthiest children are those weaned at nine months complete. Prolonged nursing hurts both child and mother; in the child, causing a tendency to brain disease—probably through disordered digestion and nutrition—in the mother, causing a strong tendency to deafness and blindness.

It is a very singular fact, to which it is desirable that attention were paid, that in those districts of Scotland, viz., the highland and insular, where the mothers suckle their infants from fourteen to eighteen months, deaf-dumbness and blindness prevail to a very much larger extent among the people than in districts where nine and ten months is the usual limit of the nursing period.

When the children are weaned, or once or twice a-day during the last month they are being nursed (when weaned at nine or ten months), the infant gets gruel made from oatmeal, to which some milk is generally added. As the child advances in age the gruel is made thicker or more consistent till it becomes the *oatmeal porridge* on which all children are fed in Scotland.

Q. 3. *Describe briefly the life of the baby at ages* 6 *and* 12 *months through the twenty-four hours. The hours of sleep, dressing, washing (with hot or cold water), food, drink, nursing in cradle or otherwise by mothers or maids, going out into the open air, or being shut up in bedrooms, physic, drugs, or spirits.*

A. The infant generally sleeps all night in its mother's arms, suckling at its leisure. When the mother therefore rises in the morning, she leaves the child in the warm bed, or pushes it into the cradle—which is generally of wood or basket work, and raised from the floor on wooden rockers, where it sleeps till after breakfast. It is then washed in lukewarm water if the weather be cold or the child very young, but in cold water if the child is above 6 months or it be summer. It is then dressed, is put again to the breast, and laid down in its cradle, where it it kept most of the day, only being raised occasionally to clean it or suckle it. Should the child be restless, advantage is taken of the rockers to rock the cradle, but not otherwise.

The child gets plenty of fresh air in the cradle, as the top of the cradle or its face is not covered over with an embroidered cloth, as is so much the custom in England.

80 per cent. of the children of Scotland, when infants, are rarely taken to the open air, unless to the door of the house, in the mother's arms. Regular airings are alone given to the children of the upper classes, who have nurses and nurse maids.

Excepting the dose of castor oil at birth (and this is not always given) the infant gets no drugs of any kind, if it be healthy, during all its nursing life. In the manufacturing districts, where the mother has to be absent all day at the manufactory, preparations of opium and whisky are largely used by the old women to whom is committed the care of the nursing infants, and artificial food is obliged to be given till the mother's return. The upper classes generally overdose their children with medicine.

Q. 4. *Any other matter likely to influence the life, such as accumulation in hospitals, lodgings, &c.*

A. I know of none for the majority of the people; and as to the criminal and absolutely destitute class, there is no difference between England and Scotland. Besides we have no hospitals for infants in Scotland.

Q. 5. *Are children deserted, sent to hospital, or ill treated? Is infanticide uncommon?*

A. Children under 1 year are very rarely deserted or ill-treated, and we have no hospitals to which they could be sent. The exceptions alone occur among the criminal class, and are so few as not to affect the general result.

Infanticide is very rare indeed. In fact a woman for the most part has no motive for infanticide in Scotland, *even with her illegitimate child;* for the birth of an illegitimate child is often the means of inducing the father to marry the woman, whereby the child is legitimized. This indeed is one of the great beauties of our Scottish law of legitimation, which even on moral and legal grounds ought to be introduced into England. It takes away the chief motive for child-murder, and does not visit on the innocent child the sins of its parents.

Remarks on Infants under 1 *Year of Age in Scotland and in England.*

When drawing up some notes on the subject, two years ago, the following tables were prepared; the year 1860 being chosen simply for the reason that it was then the last year for which the Registrar-General of Scotland had furnished us with the minute details of the ages and causes of death, and my time is so much occupied at present that I have no leisure to make the necessary researches for 1862, the year to which the Scottish Registrar-General has brought down his publications. For all practical purposes, however, the one year answers as well as the other.

nfants under 1 *Year in* ENGLAND *and in* SCOTLAND, *their chief Causes of Death, and the Proportion of Deaths from each Disease to the Total Infants Living.*

England, 1860.			Scotland, 1860.		
Estimated Number of Infants under 1 Year of Age, on 30th June, 1860, 593,000.			Estimated Number of Infants, under 1 Year of Age, on 30th June, 1860, 90,057.		
Diseases.	Number of Deaths.	Proportion of Deaths to every 100 Living.	Diseases.	Number of Deaths.	Proportion of Deaths to every 100 Living.
Premature birth, atrophy, debility	26,636	4·49	Premature birth, atrophy, debility	2,990	3·32
Convulsions	20,796	3·50	Bronchitis	1,642	1·82
Pneumonia	9,871	1·66	Pneumonia	682	0·75
Bronchitis	6,886	1·16	Hooping cough	670	0·74
Diarrhœa	5,067	0·85	Hydrocephalus	643	0·71
Hooping cough	3,580	0·60	Convulsions	558	0·61
Hydrocephalus	2,650	0·44	Teething	501	0·55
Tabes Mesenterica	2,007	0·33	Small-pox	422	0·46
Teething	1,962	0·33	Enteritis	416	0·46
Measles	1,734	0·29	Measles	322	0·35
Scarlatina	1,082	0·18	Diarrhœa	248	0·27
Phthisis	935	0·15	Scarlatina	217	0·24
Thrush	881	0·14	Phthisis	211	0·23
Enteritis	869	0·14	Tabes Mesenterica	196	0·21
Small-pox	647	0·11	Croup	182	0·20
Croup	618	0·10	Cephalitis	56	0·06
Cephalitis	580	0·09	Thrush	27	0·03
Total under 1 year	100,984	17·03	Total under 1 year	13,413	14·89

To complete that table it might be stated that the "not specified causes of death" among infants under 1 year were 3,019 in England, and 1,811 in Scotland; giving a percentage to the living of 0·51 in England, and 2·01 in Scotland. It is right to mention, also, that these "not specified causes of death" in Scotland were almost all entered on the register as "bowel hives," which in Scotland means enteritis, tabes mesenterica, and diarrhœa, so that the 1,811 deaths may be equally distributed among these three diseases.

Discarding all lesser differences in these tables, the striking fact appears, that it is *convulsions* which is the chief cause of the very high proportion of infantile deaths in England as compared with Scotland. Thus, in England 35 infants died from convulsions in every 1,000 infants living, but only 6 died in Scotland in every 1,000 from the same cause.

There is therefore something terribly faulty in the present mode of treating infants in England, and there is the most urgent necessity for something being done to arrest this fearful waste of human life; for if the English mortality from convulsions were reduced to the Scottish standard, ***seventeen thousand lives would be annually saved to England!*** These 17,000 infants, who annually die in England from convulsions above the Scottish proportion, are truly lives wasted, and their deaths are truly preventible deaths; and the saving of these lives would of itself lower the ***total mortality*** of infants in England to that of Scotland.

The cause, however, is not far to seek; and the Statistical Society or any other society or association, would confer the greatest benefit on society were they to issue instructions, and distribute these widely among the people, as to how mothers should treat their babies.

There cannot be the slightest doubt that the very high mortality among the nursing children of England is, that they get spoon meat far too early in life, before the stomach of the tender babe can digest anything but the mother's milk. This is indeed the vital difference between the mode of feeding infants in Scotland and in England. As a general rule, no spoon meat of any kind is given to infants in Scotland until nine months from birth are expired, or until the child has cut its front teeth. On the other hand, we know it is almost the invariable practice in England to give spoon meat of some kind from the ***third*** month. At this time nature dictates that the child should still be suckled, because no teeth are provided, and that very fact indicates that no other food but the natural milk will agree. The stomach at that tender age cannot digest properly two kinds of food; the consequence is indigestion, terminating in convulsions, as the result of giving spoon meat, and is the reason why 35 infants die from convulsions in England in every 1,000 living, whereas only six die from the same cause in Scotland.

When practising as a physician in Edinburgh, I made many investigations into the causes of convulsions in infants, and in almost every case found that they were caused by spoon meat having been given, and that the tendency to the convulsions was removed by confining the infant to its mother's milk. From these researches I therefore concluded, that the six deaths annually from convulsions in every thousand infants in Scotland could be reduced one half, were the few mothers who do so imprudently feed their children with spoon meat to give up that practice. Even as it is, these six deaths chiefly occur among children whose mothers have died in child-birth, or who, from bad health or other causes, are unable to suckle their own children, and do not provide a wetnurse for the infant.

One other remark must be allowed, relative to the above table. In answering your second query I remarked on the greater tendency to deaf-dumbness and blindness in districts of country where the children were suckled too long. I ought also to have added, that the tendency to brain disease, generally, is increased by the same cause, and there is far less of over lactation in England than in Scotland, in consequence of the child being put at so much earlier an age on spoon meat; and the table appears to me to show the danger of over lactation to the child, inasmuch as while in England only 44 die from hydrocephalus in every 10,000 infants, 71 die from the same cause in Scotland.

Children of Age 1—5.

As to the other queries, relative to children above 1 year of age, and up to the conclusion of the fifth year, I cannot suppose there can be much difference between their general treatment in Scotland and in England.

Scottish children are for the most part fed during all the earlier years of their lives on oatmeal porridge. Oatmeal is the oat deprived of its outer husk and then roughly ground, leaving the oat in broken particles, but not reducing it to the state of flour; this is boiled in pure water, with a little salt, to the consistence of thick batter, and when so far cooled as to be ready for being eaten, the porridge is of the consistence of a pudding, and could be turned out of the dish into which it has been poured. This porridge forms the morning and evening meal of almost all children in Scotland; and it also forms the regular meal of the adults in all the country districts, though tea with bread and butter is fast displacing it in the towns.

The porridge is for the most part supped with butter-milk, when it can be had; as butter-milk is considered much more wholesome than sweet or skim-milk, and less liable to cause colic or convulsions to children. The Scotch have thus the same ideas as to this, as have the nomade Tartars and most inhabitants of warm countries. And they are undoubtedly right; seeing that butter-milk does not coagulate on the stomach, and form a great mass of indigestible curd, which sweet or skim-milk always does.

Vegetable broth, thickened with barley, and a piece of bread of some kind, forms the mid-day meal or dinner of the great mass of children in Scotland.

Illegitimate children are treated in every respect the same as legitimate children. It must be understood, however, that illegitimate children are quite confined to the lower classes, and scarcely ever occur among the middle or upper classes of society.

Vaccination was greatly neglected in Scotland till our late Act made it imperative. Nearly all are now vaccinated within three months of birth.

As a general rule, no drugs of any kind are given to children, excepting under medical direction when they are ill, and, excepting with the criminal class, they never taste spirituous liquors of any kind.

There is a just prejudice also against commencing the education of any child till it is 6 years old, excepting always what it may pick up from its mother or older children. It is found in practice, too, that early training only damages the physical and mental capacities of a child, so that, however great a prodigy it may be in infantile life, it falls behind its compeers as life advances. My own firm conviction is, that nothing mental should be attempted with a child till 7 years old, excepting what is given as mere general training at home and in the way of pure amusement.

The dress of all infants in Scotland, under 5 years of age, is essentially the same as in England, and is the same with all classes, viz., *short petticoats*.

Some of the better classes make these short petticoats in the form of the highland kilt, but this does not alter its nature.

As to the kilt itself, as a dress for boys, if we allow the boys who wear it to bear witness regarding it, there is no costume which approaches it for comfort, or which gives more freedom to the motions. All boys who have worn it say that it is much warmer than trowsers, even in the severest weather; and so long as my own boys wore kilts nothing would induce thém to put on trowsers, as they asserted the kilt was so much warmer a clothing for winter, and so much cooler a covering for summer, while it did not hamper their motion as trowsers did. In fact, all boys whom I have known to wear the kilt side with the late General Stewart, of the 42nd Highlanders, who defended the highland costume as the very best for soldiers in all climates. It is neither more nor less than the old Roman dress; and the wretched modern imitations, to suit our squeamish notions of propriety, the French Zouave costume and the English knickerbockers, can never compare with it in anything.

P.S. During infancy the children in Scotland are not bandaged in any way so as to prevent the free motion of the limbs; and about the weaning period (nine months), the infant is encouraged to use its limbs, by being often laid down on the floor, and allowed to sprawl about till able perfectly to walk.

With the great majority of children, from the moment the child is able to walk it spends most of the day in the open air, about the doors of the street or close if in the town, about the doors of the cottage if in the country, those a little older taking the charge of the younger ones, the mother now and then seeing that they are not about some mischief.

Excepting among the better classes of a few of the large towns, *in former days*, few children had shoes or stockings till they went to school. Of late years, we have been closely imitating the English practice in our towns, and clothing the feet of our infants; but even yet, in all our rural districts, which embrace more than a half of the population, and at least half the population of our towns, that is to say, in from 75 to 80 per cent. of all the infants, no shoes or stockings are put on till the child goes to school or to service, and often not even then, excepting during winter. This practice is not found to injure the child in any way, but rather to conduce to health and vigour; and, strange as it may appear, those children who wear no shoes or stockings suffer less from chilblains than those who wear both stockings and shoes. The sole of the foot, also, becomes so hardened and insensible, as, compared with a covered foot, that the inequalities of the road do not hurt the foot, and the children walk with a lightness, firmness of step, and freedom of carriage greatly superior to those wearing shoes.

NORWAY.

By Professor Aschoug, *of Christiania.*

The nourishment of Norwegian children varies greatly among different classes and in different localities. In the families of the higher classes it differs little from that used everywhere in the north of Europe. But their number is insignificant in comparison with the great mass of our population, the peasant proprietors and the labourers. It is upon these classes the average rate of mortality depends. The diet of the children belonging to these classes is everywhere most simple and frugal. In the first year of their life they are suckled by their mother; and in the poorest families it is not uncommon, although by no means a general custom, that the mothers continue to suckle the child until two or three years' old. The reason they assign is, that it diminishes the number of children; often it is only sheer want, that forces them to choose this manner of nourishing their children, as the cheapest; afterwards the children must partake of the common fare, potatoes, cakes and porridge made from oatmeal or bigg, and coffee, generally without sugar. In the interior, pork and dried and salted meat is used according to the means of the household, but everywhere, except among the richer peasants, in small quantities. On the coast, fish, fresh or salted, enters into the daily consumption as one of the principal means of subsistence. It is however often badly prepared, and tainted. The state of horticulture is very low, and the vegetables of the garden are little used. Especially it is to be remarked that the Norwegians consume less legumina than any other people of the north and middle of Europe. The redeeming feature of their diet is, that they have considerable quantities of milk for their consumption. To a population of 1,700,000 we have 800,000 horned cattle; these cattle are certainly poorly fed, in winter time often half-starved; they produce little meat, and, in comparison with the cattle of other countries, even little milk. In the average you can scarcely reckon more than 200 gallons a-year from every cow. But of the 265,000 households in the rural districts, you may safely say that 180,000 each possess at least one cow, and among the poorer people the milk is almost wholly consumed in the household, chiefly in its natural state or as butter. Of the food at hand, the children partake indifferently, without regard to their age. I never heard that people of the lower orders consider any kind of food unhealthy for their children; they only think of satisfying their hunger. Especially I do not believe that the children get more than their share of the milk. They are generally scantily fed, and by no means ruddy complexioned or robust looking. My impression is, that the low rate of mortality has very little to do with their diet, and this opinion coincides with what I have heard from the medical chief himself, and other gentlemen, with whom I have discussed your question. But the conditions under which the great mass of our population live, are in several respects very different from those of other people.

1. The characteristic feature of our climate is its low temperature; this seems to be favourable to the vitality of every species of animals able to live here at all. Our horned cattle are a most hardy race, free from a great many maladies that decimate the stocks of other countries. Our horses are full of vigour at an age in which the common horses of the middle of Europe are decrepid. The length of human life decreases, however, sensibly north of the polar circle, and is in Finmarken considerably below the average. Whether the

climate is wet or dry, does not seem to exercise great influence on the rate of mortality. It is nearly as low on the sandy plains of Jaderen, south of Havanger, that are drenched by the rains of the Atlantic, as in Gudbranddalen and Okerdalen, where the climate is very dry.

2. Of our whole population in 1855, 1,490,000, only 198,000 lived in cities and towns. The rural population does not live in villages as in the middle of Europe and Denmark and Sweden, but in detached farms and cottages.

3. Our houses are almost all made of wood. They are often built upon dry rocks, and even when built upon earth they are generally provided with foundations of stone. They have always floors of planks. They are accordingly seldom damp, at least not in comparison with the hovels inhabited by the lower orders in other countries.

4. Norway is properly speaking a single enormous rock of the hardest formation, generally gneiss and granite. The fissures filled with earth are few and small. The land under tillage is not more than $\frac{1}{100}$ of the whole area. The proportion of its surface capable of absorbing wet and generating miasmas is certainly less than in any other European country. Low marshy ground of large extent is almost unknown.

SWEDEN.

By DR. BERG, *Director of Statistical Department.*

The Swedish women are generally very fond of their babies. The rule is, that the mother in all classes of society suckles her infants. Very often the peasant women prolong the suckling two to three years. Only in the higher classes and in the towns are wetnurses employed in the case of inability of the mother. A very remarkable exception must be noticed. Since the first results of our statistics of population have been known, in the middle of the last century, the great mortality among the infants 0—1 attracted attention. The rate of mortality was higher in the province of Finland named Osterbotten than elsewhere, and it was proved that this high rate of mortality amongst infants of the peasant women was owing to the custom which prevails of not suckling the babies, but suspending a horn filled with sour milk over the cradle for their nourishment, as the mothers are obliged to work in the fields or woods at a great distance from home. To counteract this habit and its deplorable effects, a tract was published in 1755, "On the Nursing of Infants," and distributed amongst the inhabitants. Models of the construction named "wattje," used by the Lappons for transporting their babies on the back of the mother, were also distributed to the parishes, with the view of preventing the suffocation of infants placed in the same bed as their parents. At the same time a royal edict prescribed a fine of 10 dollars for mothers who by neglecting to suckle their babies for at least half a-year had caused the death of the children. I do not know what was the effect of these measures, but traces of the bad habit are still to be found in the same region of Finland, and particularly in the province of Weiterbotten, opposite to Osterbotten, on the other side of the Baltic. In Sweden, I am sure it is the exception and not the rule. Cow milk, together with the mother's, is of frequent use; and when the suckling is prolonged to the third year, as is very often the case in the country, the babies run after the mother, ask her to kneel down, and suckle standing before her, they naturally eating also all other kinds of food.

Formerly, there was also a bad habit of giving brandy to the babies to silence them, through a notion that the effect was not injurious. The use of cradles which can be moved is general; but in our foundling hospital bedsteads of iron are introduced, without any movement.

Three public schools of midwifery are in activity, and the majority of parishes have their own midwives, spreading the rules established in the schools. The new-born child having been bathed or washed with lukewarm water and clothed, is placed first at the mother's side, and very soon allowed to suckle her. Later the cradle or a bed at the side of the mother's receives the child. The habit of giving them some laxative is discountenanced, but is still in use. The clothing for the most part is linen or cotton; temperature of the room, generally too high; cover of the bed, warm. When the whole family is often living in the same room, the air cannot be fresh; the nursery of the upper classes is also very seldom the largest and best room of the flat. Double windows, much in use here through six or seven months of the year, are not favourable to health, but we can scarcely be without them; for the ice would then cover the inside of the single window in rooms where the air is so humid as it is in the nursery. For the most part the infants pass seven or eight months of winter indoors, which cannot be favourable, when there is not sufficient ventilation.

About one-tenth of living born infants being illegitimate, this high proportion exercises a considerable influence on the mortality. Great numbers of the illegitimate cared for by the directory for the poor and paid for at fostermothers, or in Stockholm received for some time as inmates in the foundling hospital, are soon lost. From amongst the mothers of this class are generally chosen the wet-nurses, whose general character is much better than it would be supposed. For the most part they are female servants, and after their fall returning as wetnurses in a good family, they are very often rivals with the mother in their cares. After suckling they often stand as drynurses, fondly attached to the children. The mean time for suckling may be about ten months. The nutriment most employed after weaning is a pap prepared by boiling milk with wheat meal, after which small-beer and syrup are added. About the diseases of infants many prejudices trouble the medical men. The women regard thrush as inevitable, so calling the white flocks of excessive caseine in the excrements, treating them with infusion of rhubarb without sending for the doctor. Crusta lactea is regarded as a benefit—a *noli tangere*. Diarrhœa at the period of teething is very often considered as prophylactic against convulsions, and is in consequence too often neglected. Every disease with want of appetite, amaigrissement, morositas, is referred to some disease called *altå*, or *skarfin rifet*, and presumed to be a secret from medical men, but well known to some old women, who are reputed to cure it by anointing the stomach with a composition in great part of tar and garlic, or by amulets. They are ashamed to confess to the doctors that such means have been employed. In the better classes, where every family has a doctor, the female practice is of very little consequence, but in the country the doctors are few.

We have no observations calculated for the different classes of society, because the differences of the classes are not really so great. We have nobles in all occupations of life; we have no manufacturing districts comparable with the English or those of other countries; but the difference between the town, especially the large town, and the country population, has an important effect on the mortality of children. The influence of zymotic diseases seems to afford as great variability of the rate of mortality in the towns as in the country. I give you specimens of mortality from Stockholm, where the contagious diseases have a good soil, and where the great number of illegitimate children (about 40 per cent.) must augment the mortality; also from the Isle of Gothland, and from the province of Jemtland, both the most isolated provinces. But it is to be remarked that our peninsula has in the last years been severely visited by scarlatina, measles, and diphtheria. There is also in different places a great variation in the absolute number of the classes of different ages and the influence of this difference is very great on the population of Stockholm, composed to a considerable extent of a number of immigrants above 15 years. For the mortality in the whole of Sweden see the table of mortality and the diagram in the Report for 1856-60, A. II, 3. On the diagram No. 2, the mortality is marked by asterisks; but it must be observed that the first asterisk is erroneously placed, and may be corrected to 8,565 entering in the second year.

Amongst the causes of death the suffocation of infants sleeping in the same bed as the mother or wetnurse has attracted much attention. One of the reasons for recommending the use of the so called "wattje," a kind of basket made of twigs, was to prevent the mother from laying the baby close to her side and pressing it when falling asleep. Now it is well known that spasmus glottides greatly augments the number referred to sudden deaths, which are reported still to be about 160 a-year. In the years 1861-63 together, we have lost in Sweden 4,461 from scarlatina, 10,441 from measles, and 7,607 from diphtheria and croup consisting principally of children from 2 to 9 years. About 100 children a-year are burned and scalded by faults of the mothers leaving them alone near to fire or boiling fluid, &c. About 200 children a-year are drowned, for the most part from carelessness when going in boats, or bathing, or on the ice.

FRANCE.

By M. LEGOYT, *Chief of Statistical Department in the Ministry of Agriculture, Commerce and Public Works.*

Traitement des Enfans en bas Ages.

Il continue à être déplorable, surtout dans les campagnes. Les femmes s'y occupant des travaux des champs, presque autant que

les hommes, et, par conséquent, étant obligées de faire de longues absences, non-seulement *emmaillotent* leurs enfans, mais encore les attachent à leurs berceaux, de manière à leur interdire tout mouvement.

Les sages-femmes *sorties des écoles d'accouchement*, combattent vainement cette pratique barbare; leur influence dans ce sens a été à peu près nulle jusqu'à ce jour, *l'intérêt des parens* paralysant toute tentative de réforme.

Mais ce n'est pas là la cause principale de la mortalité considérable de nos petits enfans, on peut encore l'expliquer par les faits ci-après:

Un très-grand nombre d'enfans des villes ne sont pas nourris par leurs mères, mais bien par des nourrices des campagnes qui donnent de préférence leur lait à leur propre enfant et font avaler de très-bonne heure à leur nourrisson d'affreuses *bouillies* que leur estomac et leurs intestins ne peuvent digérer. De là des inflammations auxquelles un grand nombre succombe. Ces enfans ne sont, d'ailleurs, l'objet d'aucun soin de propreté; ils croupissent dans leurs ordures, ne sont que très-rarement lavés et changent plus rarement encore de linge. En cas de maladie, le médecin n'est le plus souvent appelé (je parle toujours des enfans élevés dans les campagnes) qu'à la dernière extrémité, et presque toujours trop tard. Sous ce rapport, et le nourrisson et l'enfant de la nourrice sont soumis au même et déplorable régime.

Joignez à cela que les habitations de la plupart de nos paysans sont malsaines, que le jour et l'air n'y pénètrent que difficilement, que les lits, fermés par d'épais rideaux, ne sont presque jamais ventilés; que les planchers sont souvent en terre battue, et, par suite, les chambres froides et humides, condition déplorable quand les enfans sont atteints de fièvres éruptives. Enfin, les fumiers et les *mares* destinées à l'abreuvage des bestiaux sont le plus souvent dans l'extrême voisinage de l'habitation, où il n'est pas rare, en outre, de trouver confondus les hommes et les animaux. Cet état de choses domine surtout dans nos départemens du centre et de l'ouest, où l'aisance a encore le moins pénétré.

Non-seulement, dans nos campagnes, le médecin est rarement appelé en cas de maladie des enfans (et des adultes également), mais il est rare que le *traitement* (surtout s'il est coûteux) et le *régime* soient suivis. Quoique malades, les enfans continuent à être nourris comme par le passé: un lait insuffisant et de la bouillie s'ils ne sont pas encore sevrés; une mauvaise soupe, du pain noir et dur, et des fruits verts ou gâtés. J'ai vu quelquefois des enfants atteints de la rougeole, et dans le paroxysme de l'éruption, exposés, dans la cour de l'habitation, à la pluie et aux vents, et mangeant de ces abominables fruits.

Les prétentions des nourrices augmentant sans relâche, beaucoup de mères de famille qui ne peuvent plus faire nourrir leurs enfans dans les campagnes, se décident, si elles n'ont pas de lait, ou si elles sont obligées d'aller travailler au dehors, à recourir au *biberon*, c'est à dire, au lait de vache; or il est d'expérience commune que les *trois quarts* des enfans ainsi nourris, succombent en peu de temps.

C'est parce que *les administrations hospitalières, en France,* ne trouvent plus de nourrices, que leur enlève la concurrence des familles aisées des villes, qu'elles sont obligées de faire nourrir au biberon un grand nombre des 30,000 enfans trouvés ou abandonnés qu'elles recueillent tous les ans; or la mortalité de ces malheureux petits êtres est de plus de moitié! . . . . . Elle n'est que de 29 p.c. pour les enfans pauvres que leurs mères consentent à garder et à nourrir elles-mêmes, moyennant un secours annuel.

Enfin, nous avons, en France, un grand nombre de naissances illégitimes (quoique beaucoup moins cependant que dans d'autres Etats Européens); eh bien! les enfans mis au monde dans cette triste condition, ont une bien moindre viabilité que les légitimes, soit parce qu'ils apportent en naissant le germe de maladies graves, fruit ou des désordres ou des privations de la mère, ou de ses tentatives d'avortement; soit parce qu'ils manquent des soins qu'exige leur faiblesse, les mères appartenant, pour la plupart, aux classes les moins aisées de la société, *et étant généralement abandonnées par les séducteurs*, lâcheté qu'encourage notre législation civile en interdisant la recherche de la paternité.

Voilà, mon cher Farr, les seuls renseignemens que je puisse vous donner, au courant de la plume, et sans y avoir suffisamment songé, sur les principales causes de la mortalité enfantile en France.

Cette mortalité qui est, d'ailleurs, en voie de diminution, est d'autant plus sensible en France, que la fécondité générale de notre population est de plus en plus faible et qu'elle ne s'accroîtra bientôt plus. Dans cinquante ans, si l'état actuel des choses continue, elle sera peut-être stationnaire.

Actes d'Adoption soumis à l'Homologation des Cours Impériales.

Années.	Actes d'Adoption soumis à l'Homologation des Cours Impériales et sur lesquels sont Intervenus des Arrêts.			Sexe des Adoptants.			Profession des Adoptans.			
	D'il y a Lieu.	De non Lieu.	Total.	Hommes.	Femmes.	Deux Epoux conjointement.	Propriétaires, Rentiers, Professions Libérales.	Commençants.	Autres Professions.	Professions non indiquées.
1861....	114	8	122	45	43	34	66	14	29	13
'62....	127	2	129	49	60	20	66	11	20	32
'63....	97	4	101	41	48	12	58	15	20	8

Années.	Sexe des Adoptés.			Motifs de l'Adoption. — Dégré de Parenté existant entre l'Adoptant et l'Adopté. — Adoption.				
				D'Enfants Naturels des Adoptans ou de l'un d'eux.		De Neveux et Nièces.	D'autres Parens ou Alliés.	D'autres Personnes.
	Hommes.	Femmes.	Total.	Reconnus.	Non Reconnus.			
1861....	69	56	125	22	24	18	9	52
'62..	65	72	137	34	26	11	7	59
'63....	59	47	106	25	24	10	3	44

AUSTRIA.

By Dr. Herz, *Assistant Physician to the Vienna Foundling Institution.*

In general, it must be mentioned, that the wide differences in the social position of parents influence the education and the principles therein employed in no smaller degree here than in your country, so that the higher classes follow a more or less rational way in bringing up their children; whilst in the lower classes it is very badly done, partly on account of ignorance, and partly on account of the poverty of the people. Some difference also exists in the management of town children and those in the country; the former being, on the whole, better managed, on account of the higher intelligence of the town inhabitants; whilst, again, these advantages may be somewhat counterbalanced by the residence in the crowded, and therefore unhealthy, towns. I am very sorry that time does not permit me to collect some details on this subject, but I feel sure that the difference of these conditions in England and in this country would not be a very wide one.

You may be aware that the obstetrical practice in this country, as almost in all Germany, is in the hands of midwives (*Hebammen*), medical men are only sent for in somewhat severe and complicated cases. These females, before being permitted to practice, have to attend a theoretical-practical course of lectures, lasting half a-year, in one of the public obstetrical schools, and to undergo a strict examination. In spite of these measures the midwives prove to be a principal source of many abuses, fibs and superstitious customs regarding children. These midwives are also in the possession of the most wonderful nostrums; they cure the newborn, and like especially to purge them, even to death; and I do not exaggerate in stating that many hundreds of children die annually in this country by the perverse means of these female doctors.

The majority of our children are suckled, a small part of them by their own mothers, a greater part in Vienna by wetnurses. In the better ranks of society it is now a common practice for the mother not to suckle her own offspring, while of course the wife of the working man is prevented from fulfilling this maternal duty by the necessity of working for her livelihood out of doors. The former hire wetnurses, the latter feed their babies artificially.

With regard to wetnursing we do not send our children to the country, as they do at Paris and in other towns of France, but we take the wetnurse as a kind of servant to our house. The public foundling institutions of the metropolis and of other provincial towns procure, for private families, trustworthy wetnurses, whom the medical officer of the day, after a thorough and repeated examination has found and testified to be quite healthy and fit for that task. The family in want of such an individual pays a certain sum to the institution (for Vienna it is about 3*l.*, in other places half of that), and may choose the wetnurse they would like best. In order not to be misunderstood, I must add, that only unmarried females are received in our public lying-in hospitals, where they are delivered and their children are cared for in the foundling institutions, quite free of expense, until they attain their seventh year. These females have, however, if they are fit, to remain for a certain time at the foundling institution, where they suckle, besides their own children, some other, weak or sick one, whose mother has not been found fit for this task. If they do not wish to enter private houses as wetnurses, they are dismissed after about three months' time.

The babies are generally suckled for six to nine months, or even a year, and I know also cases in which foolish mothers suckle them for two or three years; in most houses the children do not get any other food during this period, in other families the children are accustomed to soup, or rather beef-tea, light milk diet, &c., besides the breast milk, and then get exclusively the above-mentioned articles of food.

With regard to artificial feeding of children, much *peccatur extra muros et intra*. The better classes, it is true, by the directions of their medical advisers, give to their babies an equal and nourishing food, consisting mainly of cow milk, arrowroot cooked in milk, &c.; in the lower classes, they give to them different stuff pêle-mêle, and, as I know from my experience in the children's hospitals of this town, sugar-water and the different medical tea-sorts play a most important part amongst these dietetics. This part of popular knowledge is dreadfully neglected amongst the lower ranks; and, from my own experience, I must certify that the majority of diarrhœas, so frequent and so fatal during the first period of life, are chiefly caused by the neglect of the elements of hygiene. In the later periods of childhood, also, no care is taken regarding a somewhat rational selection of the food, and everything the grown up people eat, is also thought fit for the children, and even babies. So, in many country districts, where brandy and strong liquors are much in use, the children, and even the youngest ones, get spirits, of course not to the advantage of their health. I may, however, be permitted to mention that opiates for quieting restless children are very little used by the parents, or at least not nearly as frequently as it is done (according to official reports), in some parts of England; sometimes only, syr. papav. or syr. diarolii is bought here by the mothers for that purpose. One of the greatest blessings for the lower, and especially for the labouring, classes, proves to be the "Crêches," erected and supported chiefly by voluntary subscriptions, in large and industrial towns; the children are received during the day time, and kept and boarded for a trifling payment (about ½*d.*—1*d.* a-day). Our city has now eight such places, where several hundred children are daily received. Of the highest utility are our childrens' hospitals (for Vienna, we have two large ones), not only for the care and comfort the sick ones find there, but especially because the parents are instructed how best to treat and keep their healthy offspring. Of an equal importance is a third kind of institution, I would call them dispensaries for diseases of children ("Oeffentliche Kinder-Kranken Institute"). There are now six or seven in Vienna, where the sick children get medical advice and the drugs gratis (at the public expense).

The dress of our babies consists generally of a knitted light cap, a linen shirt extending down to the knees, and over that a short jacket of linen or wool. Sometimes a small handkerchief is also bound round the neck and a part of the chest, the knot of which, injudiciously enough, is often to be found on the back, so that the babies are much molested by it in lying. The feet and thighs are wrapped up in swaddling clothes, but generally babies are kept tolerably loose, and the bands of former times are (with some exceptions in country districts) no longer in general use. When the children are taken into the fresh air, to which many of the lower classes have still an unconquerable objection, this dress is, of course, modified according to the weather and the time of the year. For the elder children the so-called Scotch fashion, to have a good deal of the thighs quite naked, has of late somewhat extended. The throat and neck are pretty generally uncovered, and all the clothes more loose than they were before.

The warming of babies is generally effected by artificially warming the linen before it is used; in the country, feather beds are mostly to be found, in towns light covers are in general use. When a higher degree of warmth is needed, as in cases of premature or sick children, one or two earthern bottles, filled with boiling water and carefully covered, are put into the bed of the child. Cradles are still in use in the country, in town their place is supplied either by baskets or small beds. The warming of the nursery is effected by stoves, as fire-places are almost unknown in this country. Separate nurseries are only to be found amongst the higher class, and then the furniture is of course appropriate to the purpose for which they are used. In former times almost every family had a so-called walking chair (*gehstuhl*), by means of which the child might become accustomed to walk, they were of no small inconvenience to the little ones; something better and more comfortable is another kind of invention for the same purpose, the so-called walking machine; perambulators are not in general use. In the lower classes nurseries do not exist, they all occupy the same rooms—very often only one.

The children are washed during the first year of life every day, and also after that time several times a week. The cases in which the children are washed daily only as long as the midwife attends the mother are rather exceptional, but still they exist.

APPENDIX.

Table I.—*Population, Area in Hectars, and Density of Population in some of the Principal States, arranged in the Order indicated by Density.*

European States.	Population.		Area in Hectars.	Density.
	Persons.	Dates of Enumerated Population.		Hectars to a Person.
Norway	1,490,047	31st December, 1855	31,831,863	21·36
United States of America*	31,134,666	1860	440,435,975	14·15
Sweden	3,859,728	31st December, 1860	39,924,155	10·34
Spain	15,673,481	25th „ '60	50,703,600	3·24
Denmark	2,536,868	Mean 1855 and 1860	5,837,525	2·30
Austria	37,450,883	31st October, 1857	66,518,151	1·78
Prussia	18,004,552	Mean 1858 and 1861	28,954,822	1·61
France	36,699,491	„ 1856 „ 1861	54,239,679	1·48
Italy	22,047,034	Estimated to middle of 1863	25,932,031	1·18
Netherlands	3,293,577	31st December, 1859	3,283,997	1·00
England	18,996,916	Mean 1851 and 1861	15,104,299	·80
Belgium	4,529,560	31st December, 1856	2,945,539	·65

* Exclusive of the Territories, containing a population in 1860 of 295,225, on an area of 289,895,074 hectars.

TABLE II.—*Population at all Ages, Number of Births, and Proportion of Births, Order indicated by the Birth-*

1	2	3	4	5
European States.	Population (All Ages).			
	Both Sexes.	Males.	Females.	Date.
Italy	22,047,034	11,033,245	11,013,789	Estimated to middle of 1863
Prussia	18,004,552	8,913,698	9,090,854	Mean 1858 and 1861
Spain	15,673,481	7,765,508	7,907,973	25th December, 1860
Austria	37,450,883	18,684,241	18,766,642	31st October, 1857
England	18,996,916	9,278,742	9,718,174	Mean 1851 and 1861
Netherlands	3,293,577	1,616,357	1,677,220	31st December, 1859
Denmark	2,536,868	1,262,833	1,274,035	Mean 1855 and 1860
Sweden	3,859,728	1,874,399	1,985,329	31st December, 1860
Norway	1,490,047	729,905	760,142	„ '55
Belgium	4,529,560	2,271,783	2,257,777	„ '56
France	36,699,491	18,251,357	18,448,134	Mean 1856 and 1861

TABLE III.—*Annual Rate of Mortality among Children under 5 Years of Age, in the Principal States of Europe.*

States.	Children Living Aged 0—5 Years.	Dates to which the Population Refers.	Deaths of Children Aged 0—5 Years (Exclusive of Still-born).	Years in which the Deaths occurred.	Average Annual Rate of Mortality per Cent.
Norway	201,535	31st Dec., 1855	82,327	10 years 1851–60	4·09
Sweden	513,541	„ '60	52,841	2 „ '60–61	5·14
Denmark	330,125	Mean 1855 and 1860	87,050	5 „ '55–59	5·27
England	2,524,444	Mean 1851 and 1861	1,706,583	10 „ '51–60	6·76
Belgium	488,467	31st Dec., 1856	365,830	10 „ '51–60	7·49
France	3,525,449	Mean 1856 and 1861	1,396,372	5 „ '56–60	7·92
Prussia	2,704,073	Mean 1858 and 1861	668,426	3 „ '59–61	8·24
Holland	401,198	31st Dec., 1859	146,323	4 „ '58–61	9·12
Austria	4,783,881	31st Oct., '57	995,000	2 „ '56–57	10·40
Spain	1,883,818	25th Dec., '60	1,052,196	5 „ '58–62	11·17
Italy	2,992,307	Estimated to middle of 1863	339,596	1 „ '63	11·35

Note to TABLE IV.—The numbers in this table are only approximative. If the births of a country, as well as the deaths, were all registered, and if furthermore they were every year equal, or equal on an average of years, then several of these numbers would be rigorously exact. They are also correct if the proportions of births and of deaths unregistered are equal. For let B = annual births, and D = annual deaths of children under 5 years of age, then $\frac{B-D}{B} = p = 1 - \frac{D}{B} =$

to 100 *Persons Living in some of the Principal European States, arranged in the rate in Cols.* 10 *and* 13.

6	7	8	9	10	11	12	13
	Births (Exclusive of Still-born).			Proportional Number of Births to			Persons Living to One Birth.
Years in which Births were Registered.	Both Sexes.	Males.	Females.	100 Persons Living.	100 Males Living.	100 Females Living.	
1 year 1863	862,390	443,700	418,690	3·91	4·02	3·80	25·6
3 years 1859–61	2,108,027	1,078,680	1,029,347	3·90	4·03	3·77	25·6
5 „ '58–62	2,897,259	—	—	3·70	—	—	27·0
2 „ '56–57	2,742,698	1,412,838	1,329,860	3·66	3·78	3·54	27·3
10 „ '51–60	6,471,650	3,308,792	3,162,858	3·41	3·57	3·25	29·3
4 „ '58–61	446,943	229,702	217,241	3·39	3·55	3·24	29·5
5 „ '55–59	428,365	220,652	207,713	3·38	3·49	3·26	29·6
2 „ '60–61	259,796	132,614	127,182	3·37	3·54	3·20	29·7
10 „ '51–60	492,301	252,379	239,922	3·30	3·46	3·16	30·3
10 „ '51–60	1,371,197	702,983	668,214	3·03	3·09	2·96	33·0
5 „ '56–60	4,836,939	2,478,961	2,357,978	2·64	2·72	2·56	37·9

Table IV.—*To* 1,000,000 *Living Births, the Proportional Number of Children Living to* 5 *Years of Age, and Dying* UNDER 5 *Years of Age in the different European States.*

European States, &c.	Children *Living* to 5 Years of Age.	Children *Dying* under 5 Years of Age.	*Excess* of Children's *Deaths* over those in *Norway*.
Norway	832,765	167,235	—
Denmark	796,788	203,212	35,977
Sweden	796,613	203,387	36,152
England	736,298	263,702	96,467
Belgium	733,227	266,773	99,538
France	711,317	288,683	121,448
Prussia	682,922	317,078	149,843
Netherlands	672,614	327,386	160,151
Austria	637,219	362,781	195,546
Spain	636,834	363,166	195,931
Russia	623,736	376,264	209,029
Italy	606,222	393,778	226,543
63 healthy districts of England	822,553	177,447	10,212
30 large town districts of England	644,521	355,479	188,244
United States*	819,136	180,864	13,629

* The results for the United States are deduced from the population under 1 year, which has been assumed to represent the total births and the deaths under 5 years of age. By this method the births are probably understated, but it is equally probable that the deaths also are understated.

Table V.—*Population, Deaths, and Average Annual Rate of Mortality per Cent.*
States, arranged in the Order indicated

1	2	3	4
			Children of the Age
	Population (0—5).		
European States.	Males.	Females.	Dates of *Enumerated* Population.
Norway	102,698	98,837	31st December, 1855
Sweden	258,786	254,755	„ '60
Denmark	167,032	163,093	Mean 1855 and 1860
England	1,265,830	1,258,614	„ 1851 „ 1860
Belgium	244,788	243,679	31st December, 1856
France	1,782,614	1,742,835	Mean 1856 and 1861
Prussia	1,360,184	1,343,939	„ 1858 „ 1861
Netherlands	201,839	199,359	31st December, 1859
Austria	2,406,627	2,377,254	31st October, '57
Spain	958,974	924,844	25th December, '60
Italy	1,511,035	1,481,272	Estimated to middle of 1863

Table VI.—*Mortality of Children of the Age* 0 *and under* 5, *in* Healthy *and in*
Rate of Mortality per Cent. in Thirty Large Town Districts in the Ten Years

	Children of the			
	Population.			
	Both Sexes.	Males.	Females.	Date of Enumerated Population.
In 30 large town districts	335,809	167,980	167,829	Mean 1851 and 1861
„ 63 healthy districts	130,635	65,700	64,935	1851

Note to Table IV—*contd.*—

probability that a child born alive will live five years. Now let $B' = $ births registered $= \beta B$; and $D' = \delta D = $ deaths registered under five years of age; then the probability of survival deduced by this method from registered births and registered deaths is expressed by the equation—

$$p = 1 - \frac{\delta D}{\beta B}.$$

But if $\delta = \beta$, this becomes $p = 1 - \frac{D}{B}$. If $\beta > \delta$ then $1 - \frac{\delta D}{\beta B} > 1 - \frac{D}{B}$, or the probability of survival is too high by this method; and conversely if $\delta > \beta$ then the probability of survival by this method is too low. In other words, when the deficiency in the registration of births is less than the deficiency in the registration of deaths, the probability of survivorship comes out too high; and conversely, when the deficiency in the registration of deaths is less, proportionately, than the deficiency in the registration of births, the probability of survivorship comes out too low. Thus, let the actual annual births be $B = 1000$; and the actual annual deaths under 5 years of age be 400; then the probability of survivorship will be ·6; but if ·8 B and ·6 D are registered, we shall have

$$p' = 1 - \frac{\cdot 6\,D}{\cdot 8\,B} = 1 - \frac{\cdot 6 \times 400}{\cdot 8 \times 1{,}000} = 1 - \frac{24}{80} = 1 - \cdot 3 = \cdot 7 > p = \cdot 6.$$

And conversely $$p' = 1 - \frac{\cdot 8 \times 400}{\cdot 6 \times 1{,}000} = \cdot 467 < p = \cdot 6.$$

Here the probability of survivorship is understated, because the proportion of births omitted exceeds the proportion of deaths omitted in the register.

As the registration of births is not enforced by penalty in England, it might

of Children of the Age 0 *and under* 5 *Years in some of the Principal European*
by the Mortality in Cols. 8 *and* 9.

5	6	7	8	9	1
0 and under 5 Years.					
Deaths (0—5) (Exclusive of Still-born).			Average Annual Rate of Mortality per Cent.		European States.
Years in which Deaths occurred.	Males.	Females.	Males.	Females.	
10 years 1851–60	44,401	37,926	4·32	3·84	Norway
2 „ '60–61	28,378	24,463	5·48	4·80	Sweden
5 „ '55–59	46,968	40,082	5·62	4·91	Denmark
10 „ '51–60	916,882	789,701	7·24	6·27	England
10 „ '51–60	195,716	170,114	8·00	6·98	Belgium
5 „ '56–60	746,203	650,169	8·37	7·46	France
3 „ '59–61	356,023	312,403	8·73	7·75	Prussia
4 „ '58–61	77,933	68,390	9·65	8·58	Netherlands
2 „ '56–57	534,003	460,997	11·09	9·70	Austria
5 „ '58–62	—	—	—	—	Spain
} 1 year 1863	180,557	159,039	11·95	10·74	Italy

Unhealthy Districts *of* England. *Population, Deaths, and Average Annual*
1851-60, *and in Sixty-three Healthy Districts, in the Five Years* 1849-53.

Age 0—5.						
Deaths.				Average Annual Rate of Mortality per Cent.		
Years of Deaths.	Both Sexes.	Males.	Females.	Both Sexes.	Males.	Females.
10 years 1851–60	338,990	179,837	159,153	10·09	10·71	9·48
5 „ '49–53	26,361	14,282	12,079	4·04	4·35	3·72

be presumed that the probability of survivorship is somewhat understated for this country by the method here employed; but the error is counteracted by another in an opposite direction.

The effect of an increase of the annual births will be seen by referring to the previous paper, where an exacter method is described; that method being inapplicable in the greater number of States from the want of adequate data.

Let B_0, B_1, B_2, B_3, B_4 be the annual number of births in 5 years, increasing in the ratio of 1 to r, so that $B_1 = rB_0$, and generally $B_s = r^s B_0$. Then let d_0, d_1, d_2, d_3, d_4 be the deaths in each of the first 5 years of age, during, say the year 1865; if we assume that d_0 die out of B_4 born at the beginning of that year, d_1 will die out of $B_3 = \frac{B_4}{r}$; to obtain the deaths corresponding to B_4, therefore, multiply d_1 by r; for the same reason d_2 is multiplied by r^2, &c., and the correct probability of living becomes

$$p = \frac{B_4 - (d_0 + rd_1 + r^2d_2 + r^3d_3 + r^4d_4)}{B_4}.$$

Through the omission of this correction in the tables, they understate the probability of dying, and overstate the probability of living, from which the survivors are deduced, unless there is a countervailing element. Fluctuations of the annual births also affect the results.

The errors of the data and of the method do not probably affect sensibly the comparative results, which agree closely with those deduced independently from the deaths, and the enumerated population under 5 years of age. (See Table III.)

TABLE VII.—*Population, Deaths, and Average Annual Rate of Mortality per European States, arranged in the Order*

1	2	3	4	5
				Children of the
European States.	Population (0—1).			
	Both Sexes.	Males.	Females.	Date.
Denmark	76,066	38,716	37,350	Mean 1855 and 1860
Sweden	119,426	60,589	58,837	31st December, 1860
England	545,922	273,911	272,011	Mean 1851 and 1861
France	775,596	394,181	381,415	„ 1856 „ 1861
Netherlands	97,230	49,010	48,220	31st December, 1859
Spain	409,071	208,841	200,230	25th „ '60
Italy	730,690	368,891	361,799	Estimated to middle of 1863

1	2	3	4	5
				Children of the
European States.	Population (1—3).			
	Both Sexes.	Males.	Females.	Date.
Sweden	215,384	108,503	106,881	31st December, 1860
Denmark	132,463	66,621	65,842	Mean 1855 and 1860
England	1,020 322	511,646	508,676	„ 1851 and 1861
Netherlands	158,209	79,417	78,792	31st December, 1859
Italy	1,270,949	642,520	628,429	Estimated to middle of 1863

1	2	3	4	5
				Children of the
European States.	Population (3—5).			
	Both Sexes.	Males.	Females.	Date.
Sweden	178,731	89,694	89,037	31st December, 1860
Denmark	121,596	61,695	59,901	Mean 1855 and 1860
England	965,389	483,837	481,552	„ 1851 and 1861
Netherlands	145,759	73,412	72,347	31st December, 1859
Italy	990,668	499,624	491,044	Estimated to middle of 1863

Cent. of Children of the Ages 0—1; 1—3; *and* 3—5; *in some of the indicated by the Mortality in Col.* 10.

Age 0—1.

6	7	8	9	10	11	12
	Deaths (0—1) (Exclusive of Still-born).			Average Annual Rate of Mortality per Cent.		
Years in which Deaths occurred.	Both Sexes.	Males.	Females.	Both Sexes.	Males.	Females.
5 years, 1855–59	52,305	29,316	22,989	13·75	15·14	12·31
2 „ '60–61	33,864	18,523	15,341	14·18	15·28	13·04
10 „ '51–60	996,630	557,213	439,417	18·26	20·34	16·15
5 „ '56–60	865,429	477,193	388,236	22·32	24·21	20·36
4 „ '58–61	92,363	50,707	41,656	23·75	25·87	21·60
5 „ '58–62	510,618	—	—	24·96	—	—
} 1 year, 1863	199,712	108,760	90,952	27·33	29·48	25·14

Age 1—3.

6	7	8	9	10	11	12
	Deaths (1—3).			Average Annual Rate of Mortality per Cent.		
Years in which Deaths occurred.	Both Sexes.	Males.	Females.	Both Sexes.	Males.	Females.
2 years, 1860–61	13,536	7,062	6,474	3·14	3·25	3·03
5 „ '55–59	23,089	11,855	11,234	3·49	3·56	3·41
10 „ '51–60	516,161	262,828	253,333	5·06	5·14	4·98
4 „ '58–61	39,651	19,989	19,662	6·27	6·29	6·24
} 1 year, 1863	108,282	55,800	52,482	8·52	8·68	8·35

Age 3—5.

6	7	8	9	10	11	12
	Deaths (3—5).			Average Annual Rate of Mortality per Cent.		
Years in which Deaths occurred.	Both Sexes.	Males.	Females.	Both Sexes.	Males.	Females.
2 years, 1860–61	5,441	2,793	2,648	1·52	1·56	1·49
5 „ '55–59	11,656	5,797	5,859	1·92	1·88	1·95
10 „ '51–60	193,792	96,841	96,951	2·01	2·00	2·01
4 „ '58–61	14,309	7,237	7,072	2·45	2·46	2·44
} 1 year, 1863	31,602	15,997	15,605	3·19	3·20	3·18

ORGANISATION, STRENGTH, *and* COST *of the* ENGLISH *and* FRENCH NAVIES *in* 1865. *By* COLONEL W. H. SYKES, M.P., F.R.S., *one of the Vice-Presidents of the Society.*

[Read before the Statistical Society, February, 1866.]

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I.—INTRODUCTORY.

As very exaggerated opinions were prevalent not only in the public mind, but in the House of Commons, in the beginning of 1865, with respect to the progress the French navy was making in strength, efficiency and improved organisation, as compared with the British navy, I deemed it worth while to look over the French Official Naval Budget for 1865, characterized, like that of the army, for its elaborate and perspicuous details in every department of the naval service. The result of my investigations of the French budget and the English naval estimates, satisfied me that the old status or condition of both the English and French navies was rapidly altering, by the substitution of iron-clad vessels of all rates for the wooden vessels previously employed, whether sailing, paddle, or screw. The French had first commenced the change some years back. As it would necessarily neutralize our vast numerical superiority in wooden ships, that had rendered us masters on the ocean, we were compelled to enter into the new race of competition with all the energy of the English character, otherwise the deference hitherto conceded to us, as the leading maritime power, would have been endangered. The present transition state, however, of the two navies, seemed to me to cause any comparison to be unsatisfactory, if not valueless, and scarcely worth the labour, and I abandoned my intention of making it, and I communicated this intention to the Council of the Statistical Society. It was, however, suggested by some members of the Council, that, as the old conditions of the English and French navies were likely to pass away, it would be desirable for future reference to have upon record the present numerical strength in ships and men, and cost of both navies, for the purpose of comparison with the new organisation, when it shall have been fully developed. I acquiesced in these views; and the present paper, which I have endeavoured to condense as much as possible, is the result, for without condensation, a comparison of details would have swollen this paper into a volume.

II.—NUMBER OF SHIPS IN THE ENGLISH NAVY.

First, with respect to the numbers of ships, their rating and armaments in the two navies, at the beginning of 1865.

In the body of the English naval estimates for 1865-66 there is not any information given of the number of ships, their rates armaments, and manning, for the maintenance of which supplies are asked from Parliament; but in the appendix to the estimates, at page 116, a short statement of the numbers of ships in COMMISSION is given, but without mention of armament, or manning, or charge for each vessel; and the status is only given for the 1st December, 1863, and 1st December, 1864. The total number in commission, at the first date was 336,* and at the last date it was 325.† To be able to state the whole number of vessels in the British navy for 1865, for comparison with the French budget of 1865, it is necessary to have recourse to returns presented by the Secretary to the Admiralty, or those moved for by individual members of Parliament.

The following Parliamentary Return, however, dated 15th February, 1865, shows, that at that date there were 445 British screw and paddle steam vessels afloat; and that 26 were building; and that there were 69 effective sailing ships and mortar vessels afloat, making a total of the British navy of 540. Of this number, 27 are represented as iron-clad screws, and 8 others were building. Of the iron-clads afloat 16 were of wood and 11 of iron. But on the 8th February, 1864 (Parliamentary Return, 67), the total number was 630; there being at that date 506 steamers and 86 sailing vessels afloat and 38 building; 90 ships, therefore, had been sold or broken up since last year, or otherwise disposed of. On the 15th February, 1862, by Return 45, there were 465 screws, 115 paddle, and 110 sailing vessels, total 690; so that between 1862 and 1865 there has been a diminution of 150 vessels.

---

* 243 steam, 93 sailing.

† 233 steam, 92 sailing.

Table I.—*Return showing the Number of Steam Ships Afloat and Building together with the Number of Effective Sailing Ships, on the 1st February, 1865.*

Classes of Ships.		Steam.			Effective Sailing Ships Afloat.	Total Steam and Sailing.
		Afloat.	Building.	Total		
Armour-plated—						
Ships, iron, 3rd rates	screw	6	3	9	—	9
" " 4th "	"	2	—	2	—	2
" wood, 3rd "	"	6	1	7	—	7
" " 4th "	"	1	—	1	—	1
Cupola ships, 4th "	"	4	—	4	—	4
Corvettes, wood, 6th rates	"	1	1	2	—	2
Sloops, "	"	2	—	2	—	2
Gun boats, iron	"	—	3	3	—	3
Floating batteries, iron	"	3	—	3	—	3
" wood	"	2	—	2	—	2
Ships of the line	"	55	3*	58	1	59
Frigates	"	37	1	38	9	47
"	paddle	6	—	6	—	6
Block ships	screw	8	—	8	—	8
Corvettes	"	26	1*	27	—	27
Sloops	"	35	3	38	4	42
"	paddle	19	—	19	—	19
Small vessels	"	13	—	13	—	13
Despatch vessels	"	4	—	4	—	4
Gun vessels	screw	37	4*	41	—	41
" boats	"	105	6*	111	—	111
Tenders, tugs, &c.	"	7	—	7	1	8
"	paddle	40	—	40	—	40
Mortar ships	screw	4	—	4	—	4
Troop and store ships	"	15	—	15	—	15
"	paddle	1	—	1	—	1
Yachts	screw	1	—	1	—	1
"	paddle	5	—	5	—	5
Mortar vessels and floats		—	—	—	54	54
Total screw		357	26	383	—	—
" paddle		88	—	88	—	—
Grand total		445	26	471	69	540

* The building of 3 line-of-battle ships, 1 corvette, 4 gun vessels, and 4 gun boats is suspended.

With respect to the iron-plated ships built and building, a Parliamentary Return obtained by Mr. Laird, and dated 14th June, 1865, No. 367, showed 26 iron-clads afloat, and 5 building, and 5 armour-clad floating batteries. Of these the hulls of 15 were of wood, 1 wood and iron, and 20 iron.

Mr. Laird's return give the number of guns, tonnage, and cost of the several vessels, but not the manning. The Achilles of 6,121 tons, and 9,525 load displacement, and 1,250 horse power, and 26 guns, built in a Government dockyard, cost 457,810*l.* The Black Prince of 41 guns, and 6,109 tons, and 9,250 tons displacement, and 1,250 horse power, and built in a private yard, cost only 363,813*l.*, and the Warrior, a similar ship, with one gun less, cost 360,995*l.*; but the Minotaur and Agincourt, each of 26 guns, and 6,621 tonnage, and 10,230 tons displacement, and 1,350 horse power, also built in a private yard, were to cost 425,358*l.* and 423,684*l.* respectively, when completed, the larger vessels costing 32,452*l.* and 34,120*l.* less than the Achilles.

Table III shows that the combatant force of the English navy in commissioned officers and men is 4,128 officers, 33,872 petty officers and men, 7,000 boys, 484 officers of the coast guard, and 6,516 seamen, including 320 boys, total 52,000. To this number is to be added 511 officers infantry and artillery of the marines, and 16,489 infantry and artillery, total 17,000, grand total 69,000, besides 21,500 naval volunteers and reserved seamen. These numbers also are exclusive of 31 officers and 517 men for dockyard police, and 500 civilians, officers and men, employed in the victualling department. The combatant force, therefore, may be considered 514 ships, and 90,500 officers and men.

III.—STRENGTH OF THE FRENCH NAVY.

The following Tables II and IIA, in chapter iv, section 2, of the French budget, are an unquestionable improvement upon the English estimates and the preceding returns, inasmuch as they give the effective screw, paddle, and sailing portions of the navy afloat in 1865, and supply all information in regard to rates, manning, and cost (with the exception of the number of guns) in each vessel, by a glance of the eye over their columns. There are only 81 screw steam vessels afloat, with 831 officers, independently of the attached staff, and 17,234 sub-officers and seamen, and the total annual cost of these 81 screw vessels is 11,373,712 frs., or 454,949*l.*, and this includes, as is shown by the Tables II and III, the commissariat, medical and clerical officers, and additional pay and table money for the officers, and that sum also includes 1,571,073 frs., or 62,843*l.*, for clothing. The reading of the table is as follows: Take the single ship of the first-rate, with a fixed complement of 1,170, of whom

32 are officers, the pay of the 32 officers is 44,800 frs., 1,792*l.*, commissariat officers 2,000 frs., 80*l.*, chaplains 2,500 frs., 100*l.*, medical 7,200 frs., 288*l.*, additional pay, 10,158 frs., table allowance 30,203 frs., and the total annual cost of the officers is 96,862 frs., or 3,874*l.*, averaging 121*l.* per officer, and the total cost of the seamen 515,874 frs., or 20,635*l.*, or less than 19*l.* per seaman,* and the total annual cost of a vessel of war of the first rate is therefore 612,736 frs., 24,509*l.* Similarly the manning and cost of any other vessel is shown; for instance, their are two frigates of the 2nd class, they have 34 officers at a cost of 120,014 frs., 4,801*l.*, and 796 sub-officers and men, at a cost of 410,489 frs., 16,419*l.*, and

---

* The wages of British seamen are regulated by their rating, and range from 16*l.* 14*s.* 7*d.* to 30*l.* 8*s.* 4*d.*, and to petty officers up to 82*l.* 2*s.* 6*d.* per annum.

STRENGTH OF THE FRENCH NAVY.—TABLE II OF THE FRENCH BUDGET.—

Nombre de Bâtiments.	Désignation des Bâtiments.	NATURE								
		Effectif Réglementaire.	Etats-Majors.	Equipages.	Total.	Traitement complet				
						Solde de Grade.				
						Des Officiers de la Marine.	Des Officiers du Commissariat.	Des Officiers de Santé.	Des Aumôniers.	Des Mecaniciens.
						fr.	fr.	fr.	fr.	fr.
—	Report	—	—	—	—	—	—	—	—	—
	Bâtiments à Hélice.									
12	Vaisseaux—									
	1 de 1er rang	1,170	32	1,138	1,170	44,800	2,000	7,200	2,500	—
	6 „ 2e „	913	180	5,298	5,478	244,800	9,000	48,200	15,000	—
	3 „ 3e „	814	84	2,338	2,442	115,500	4,500	21,600	7,500	—
	2 école de matelots canonniers	955	86	1,824	1,910	121,800	5,400	12,000	5,000	—
6	Frégates—									
	1 de 1er rang	415	18	397	415	25,900	1,500	6,000	2,500	—
	2 „ 2e „	415	34	796	830	51,800	3,000	12,000	—	—
	3 „ 2e „	388	51	1,113	1,164	57,000	4,500	18,000	—	—
2	Corvettes	—	—	—	—	—	—	—	—	—
33	Avisos	—	—	—	—	—	—	—	—	—
18	Canonnières	—	—	—	—	—	—	—	—	—
10	Transports................	—	—	—	—	—	—	—	—	—
81		—	831	17,234	18,065	1,070,950	83,600	231,600	32,500	26,000

the total cost is 530,503 frs., consequently each officer averages 141*l.*, and each seaman less than 21*l.*; and each frigate of 17 officers and 398 men costs 265,251 frs., or 10,610*l.* per annum. The 831 officers of the 81 screws cost 113,915*l.*, and average therefore 137*l.* each. The 17,224 petty officers and seamen cost 341,034*l.*, and average each a fraction less than 20*l.* The total cost of the 81 screws is 11,373,712 frs., 454,948*l.*, and this includes clothing. Similar information is not obtainable from the English estimates. The pay of captains in the British navy varies according to their class from 399*l.* 19*s.* 7*d.*, to 600*l.* 14*s.* 7*d.*, besides command money from 91*l.* 5*s.*, to 328*l.* 10*s.* Lieutenant's pay is from 182*l.* 10*s.* to 200*l.* 15*s.* per annum, and command money or allowance from 27*l.* 7*s.* 6*d.*, to 68*l.* 8*s.* 9*d.* per annum.

Suite du Chapitre IV, Etats-Majors et Equipages.

DES DEPENSES.

des Etats-Majors.				Solde et Accessoires de la Solde des Equipages.	Total Général.	A Déduire pour former au présent Chapitre un Art. spécial (Art. 4) sous le titre Habillement des Equipages.	Reste Montant Présumé de la Dépense.
Accessoires de la Solde des Officiers Entretenus.	Solde et Accessoires de la Solde des Officiers Auxiliaires.	Traitement de Table.	Total des Etats-Majors.				
fr. —	fr. —	fr. —	fr. —	fr. —	fr. —	fr. —	fr. —
10,158	—	80,208	96,862	515,874	612,736	106,632	506,104
55,551	—	175,882	542,633	2,468,424	3,011,357	494,064	2,517,293
26,869	—	87,508	263,478	1,090,512	1,353,900	219,384	1,134,606
24,645	—	76,832	545,677	777,227	1,022,904	171,648	851,256
6,714	—	21,900	64,514	204,952	269,466	36,372	233,094
13,064	—	40,150	120,014	410,489	530,503	72,936	457,567
19,596	10,800	60,225	170,121	534,384	704,505	101,448	603,057
—	—	—	—	—	—	—	—
—	4,200	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
315,202	15,000	1,073,013	2,847,866	8,525,845	11,373,712	1,571,073	9,802,639

Table IIa.—Suite des

Nombre de Bâtiments.	Désignation des Bâtiments.	NATURE DES				
					Traitement	
					Solde	
		Etats-Majors.	Equipages.	Total.	Des Officiers de la Marine.	Des Officiers du Commissariat.
					fr.	fr.
	Suite de l'Article 3—(Equipages à la Mer). *Récapitulation des Equipages à la Mer.* Bâtiments Armés.					
—	Etats-majors généraux	142	504	646	—	—
81	Bâtiments à hélice	831	17,234	18,065	—	—
57	„ roues	250	3,759	4,009	—	—
50	„ voiles	221	3,303	3,524	—	—
188		1,444	24,800	26,244		
6	Bâtiments armés pour essais	15	351	366	—	—
20	„ en réserve, 1re catégorie	100	2,560	2,660	—	—
—	„ „ 3e „	25	210	235	—	—
—	Vaisseau-école en rade de Brest	27	215	242	—	—
—	Idem des mousses	13	941	954	—	—
—	Pénitencier flottant	4	81	85	—	—
—	Bâtiments de servitude	—	150	150	—	—
—	Directions des ports en Algérie	—	229	229	—	—
—	Supplément colonial de traitement de table	—	—	—	—	—
—	Allocation pour les musiques des officiers généraux	—	—	—	—	—
		1,628	29,537	31,165		
—	A déduire pour incomplète	36	656	692	—	—
214	Reste	1,592	28,881	30,473	2,235,	289,

In addition to the above 81 screws, there are 57 paddle-wheel steamers, varying from 60 to 450 horse power, with 250 officers and 3,759 men, total 4,009, at a charge of 3,237,276 frs., 129,491*l.*; add to the above, 50 sailing vessels and 6 frigates with screws for experiment, and 20 ships in reserve, making a total of 76, with 436 officers and 6,214 men. The total of the French navy therefore is 214 ships and 30,473 officers, men and boys, afloat, at an annual cost, including clothing, of 22,272,365 frs., 890,894*l.* There are also a few vessels at Brest and elsewhere for schools, not enumerated. The infantry troops of the marine, as they are called, consist of 118 companies, with 483 officers and 13,816 sub-officers and men, of whom 6,225 are in the colonies, 28 companies of artillery, with 176 officers and 4,233 sub-officers and men, including 6 companies of workmen; of these 1,252 are in the colonies, 5 companies of gendarmerie marine, with 17 officers and 365 men; a company of discipline, with

Chapitre 4. [000's omitted from the francs only in this table.]

DEPENSES.

Complet des Etats-Majors.							Solde et Accessoires de la Solde des Equipages.	Total Général.	A Déduire pour former au présent Chapitre un Art. spécial (Art. 4) sous le titre Habillement des Equipages.	Reste Montant Présumé de la Dépense.
de Grade.			Accessoires de la Solde des Officiers Entretenus.	Solde et Accessoires de la Solde des Officiers Auxiliaires.	Traitement de Table.	Total des Etats-Majors.				
Des Officiers de Santé.	Des Aumôniers.	Des Mécaniciens.								
fr.	fr.	fr.	fr.	fr.	fr.	fr.	fr.	fr.	fr.	fr.
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
486,	101,	38,	940,	49,	2,931,	7,023,	15,248,	22,272,	2,638,	19,633,

5 officers and 211 men. There are, however, other details, embracing civilians, professors, and employées on shore and on board, making, according to Table III, a grand total of 60,376, inclusive of 4,652 officers, and this number also includes the general staff of the effective service of the navy. Cadets, commissioners, secretaries, &c., and 504 others; musicians, boatmen of the admirals, domestics, &c.

The French navy list comprises only 2,174 active combatant commissioned officers (*vide* Appendix, Table III), afloat and ashore. The French have only 1 vice-admiral and 9 rear-admirals in commission, and a total number of 2 admirals, 17 vice-admirals, and 30 rear-admirals on the effective list, and 14 vice-admirals and 20 rear-admirals on the reserved list, while the total number of admirals of different grades in the half-pay and reserved list amount to 205. The British navy has 28 admirals, of grades, in commission, 87

TABLE III.—*Comparison of the Combatant Strength of the*

ENGLISH.

	Screws.	Paddle.	Sailing.	Total of Ships.	Officers.	Sub-Officers and Men.	Total Officers and Men.
Ships	357	88	69	514*	4,128†	33,872	38,000
1. Boys	—	—	—	—	—	—	7,000
2. Coast guard, 3,000 afloat, 4,000 ashore	—	—	—	—	484	6,516	7,000
3. Infantry, marines	—	—	—	—	348	13,397	17,000
4. Artillery „	—	—	—	—	76	3,072	
5. Staff of „	—	—	—	—	87	20	
6. Naval volunteers	—	—	—	—	—	—	5,500
7. Reserve seamen	—	—	—	—	—	—	16,000
Total combatants	—	—	—	—	—	—	90,500
Established workmen in steam factories	—	—	—	—	—	2,894	2,894
„ dockyards	—	—	—	—	—	8,763	8,763
Hired artificers and workmen in dockyards	—	—	—	—	—	6,640	6,640
Dockyard police	—	—	—	—	31	517	548
Victualling yards	—	—	—	—	19	488	507
Dockyards and departmental clerks, messengers, &c., about	—	—	—	—	—	—	516
Total	—	—	—	—	—	—	19,868
	357	88	69	514*	5,173	76,179	110,368

* Parliamentary Return, 15th February, 1865, 26 ships building, total 540.

† Inclusive of 93 chaplains, 459 medical men, 196 paymasters and engineers, masters, &c., but exclusive of commissariat officers and naval yards police. The coast guard has 320 boys.

admirals of grades on the half-pay active list, 118 on the reserved list, and 108 on the retired list, total 313 admirals; and the total commissioned officers under the several heads, on the 1st January, 1865, was active half-pay 1,125, reserved list 401, retired list 1,715, and officers of the marines 275, total 3,516; and the annual cost of this body unemployed was 698,195*l*.

The combatant force in Table III of British commissioned officers, inclusive of medical men, chaplains, paymasters, engineers, and assistant engineers, is distributed as follows:

Flags and retinue	210
Superintending dockyards	57
Effective for general service	2,363
Gunnery and training ships	204
Stationary ships	1,027
Surveying vessels	80
Troop ships	101
Store „	55
Drill „	31
Total officers	4,128

English and French Navies, resulting from the preceding details.

FRENCH.

	Screws.	Paddle.	Sailing.	Total of Ships.	Officers.	Men.	Total Officers and Men.
Ships	81	57	76	214	1,592	28,881†	30,473
1. Officers and men ashore	—	—	—	—	99*	4,160	4,259
2. Infantry, marines	—	—	—	—	403	13,816	14,299‡
3. Marine artillery	—	—	—	—	176	4,233	4,409§
4. Medical officers	—	—	—	—	540	—	540
5. Maritime engineer corps	—	—	—	—	153	—	153
6. Mechanicians in chief	—	—	—	—	40	—	40
7. Marines at ports and pyrotechnic	—	—	—	—	26	267	293
8. Company of discipline	—	—	—	—	5	211	216
9. Artillery instructors	—	—	—	—	38	279	317
10. Infantry and artillery inspectors	—	—	—	—	15	—	15
11. Engineers of roads and bridges	—	—	—	—	32	45	77
12. Maritime tribunals	—	—	—	—	32	—	32
13. Marine gendarmerie	—	—	—	—	17	365	382
14. Officers of the commissariat	—	—	—	—	434	—	434
15. Company of firemen	—	—	—	—	—	448	448
16. Naval officers, engineers, professors, artisans, &c.	—	—	—	—	970	3,019	3,989
	81	57	76	214	4,652‖	55,724	60,376

* Including 10 commissariat and 4 medical officers. † Including boys.

‡ 6,225 in the colonies. § 1,252 in the colonies.

‖ The French include the commissariat, secretaries, cadets, 67 chaplains and medical men in the column of officers, also examiners, professors, &c.

This does not include 275 midshipmen and 206 naval cadets.

The preceding tables and details embrace the comparative combatant strength of the English and French navies, but this is independently of civilian adjuncts, the exact number of which in the English estimates it is difficult to make out, except at the expense of more labour than I could afford to bestow upon the subject, because in some abstracts or recapitulations the numbers are wanting. But the French budget has an annexe, Table XIII, in which every person, military or civil, for whom money is drawn, is accounted for in a tabular statement; the total number in the French budget is 63,598, but this comprises 2,800 convicts and 422 warders, leaving the number of 60,376 as comparable with the numbers employed in the English navy (*vide* Appendix, Table XIII). But before proceeding to the respective cost, it will be advantageous to point out, for the further improvement of the English navy estimates, in which great improvements have undoubtedly taken place in the last three sessions, that the number and classification of the ships are not to be found in the estimates, whereas in the French budget, by a simple condensation in a single table (as is shown in Tables II and IIA), not only the numbers and classifications are shown, but the complement in officers and men on board each ship; and the annual charge of each vessel is shown. Iron-clad vessels, however, are not distinguished in these tables, but we know that the French navy has 17 sea-going ships of this class, namely, the Magenta, with a displacement of 6,737 tons, and Solferino, both of wood and partially plated, Magnanime, Valeureuse, Provence, Surveillante, Gauloise, Guienne, Revanche, Savoir, Flandre, and Héroïne, all timber ships, except the Héroïne of 1,000 horse power, but not wholly armour-clad. The Invincible, Gloire, Normandie, of 900 horse power and displacement of 5,630 tons, and Couronne and Belliqueuse of 1,000 horse power, are wholly iron-clad, but the Belliqueuse is built of wood.

The largest of the French ships, however, cannot compete in size, strength, or speed with the Achilles, Minotaur, Warrior, Agincourt, Black Prince, and Northumberland, all with a displacement of from 9,000 to 10,000 tons, and with 1,250 to 1,350 horse power, and with heavier guns than the French ships carry. Besides these 17 sea-going plated ships, the French navy have 11 iron-cased floating batteries of 150 horse power, the Paixhans, Palestro, Pehio, Saigon, Embuscade, Imprenable, Protectrice, Refuge, Arrogant, Implacable, Opiniâtre, and the Taureau, of 900 horse power, having a tower, their displacement is from 1,220 to 1,550 tons.

Having disposed of the comparative effective combatant force of the two navies, the next stage is their administrative organization, and the cost in the several departments of the two navies; but, as I have already said, to enter into elaborate details would be to compile a volume, I propose, therefore, to deal very much in results, with a running comment upon any particulars of departmental organisation. The accompanying Tables, IV, V, and VI, show the respective cost.

IV.—ORGANISATION OF THE ENGLISH NAVY.

The English navy is governed by a Board of Admiralty, at the head of which is a cabinet minister, who is called First Lord, with a salary of 4,500*l.* per annum; associated with him are four other members, called Lords by courtesy, three with salaries of 1,000*l.* per annum, and one with 1,200*l.* The first secretary has 2,000*l.*, and the second secretary 1,500*l.* per annum. Under the Board are five great departments:—Controller of the Navy, Accountant-General, Storekeeper-General, Controller of Victualling, and Director-General of the Medical Department; 451 persons are employed in all.

V.—ORGANISATION OF THE FRENCH NAVY.

The French navy is governed by a secretary of state called the minister of marine and the colonies; and the colonial administration is under him, with a salary of 4,000*l.* per annum. His office establishment consists of 239 persons, including 5 directors, 1 chief of the cabinet, 55 sub-directors and clerks, accountants, &c.; he has also 10 draughtsmen and 48 messengers. (*Vide* Appendix, Tables I and II). He has under him a Council of Admiralty, consisting of 4 vice-admirals, each with a salary of 20,000 frs., or 800*l.* per annum; 1 rear-admiral, a director of naval construction, &c., and a commissary-general, each with 600*l.* per annum. The secretary has 9,000 frs., 360*l.* per annum, as against the English first secretary with 2,000*l.* per annum. At this council 2 captains of the navy of the first class have seats with 200*l.* per annum and lodging money each. The minister has also the assistance of a council of works, consisting of a vice-admiral, as president, 2 rear-admirals, 1 captain first class, and 2 chief-engineers for naval construction. This board has also 1 second class engineer as secretary. The inspectorates of artillery, engineers and infantry, of hydraulic works, and the medical department, are also under him; there are also 10 designers or draughtsmen, 48 agents, and 21 officers belonging to the inspectorates; in all 318 persons, besides the councillors. Table V shows the total cost of the French Admiralty to be 73,086*l.* The English Admiralty, 175,957*l.*

VI.—COST OF THE ENGLISH NAVY.

The English estimates for 1865-66 are classed in 17 votes, as shown in Table IV, to which there are 12 explanatory appendices, and the total charge is 10,392,224*l.*, including 320,580*l.* on account of the army department for the conveyance of troops; but it is anticipated that the estimates will be reduced to 10,152,905*l.* by miscellaneous receipts. The French budget for 1865, is divided into five sections, and these into twenty-four chapters, and each chapter into a certain number of articles, and there are six appendices. The total amount of the budget is 153,232,332 frs. but as 2,493,700 frs., 998,228*l.*, belong to the administration of the twelve French colonies, the cost of the navy is only 128,286,632 frs., or 5,131,465*l.*

The following tables (IV and V) place in juxtaposition, as far as the different organisation of the two navies permits, the comparative cost of the different departments. In the French budget, the administration of the navy stands at the head of the chapters. It corresponds to the British Admiralty Office, which is in the third vote of the estimates, wages being the first vote.

TABLE IV.—*An Estimate of the Sums required to meet the Expenses which may be Incurred in the Naval Department in the Year 1865-66, showing the Increase and Decrease, as compared with the Sums Voted for the preceding Year under the following Heads, viz.*:—

Number of Vote.	Page.	Abstract.	Required to be Voted for the Service of the Year 1865-66.	Last Vote for the Financial Year, 1864-65.	1865-66. Increase.	1865-66. Decrease.
			£	£	£	£
1	6	Wages to seamen and marines	2,945,006	2,929,913*	15,093	—
2	8	Victuals and clothing for marines	1,325,694	1,304,119	21,575	—
3	10	Admiralty office	175,957	168,605	7,352	—
4	16	Coast guard service, royal naval coast volunteers, and royal naval reserve	284,395	300,718	—	16,323
5	20	Scientific branch	70,042	71,276	—	1,234
6	26	Her Majesty's establishments at home...	192,415	192,574	—	159
7	46	" " abroad	37,332	37,666	—	334
8	54	Wages to artificers, &c., employed in Her Majesty's establishments at home	1,158,797	1,275,316	—	116,519
9	59	Wages to artificers, &c., employed in Her Majesty's establishments abroad	72,585	69,205	3,380	—
10	60 and 61	Naval stores for the building, repair, and outfit of the fleet and coast guard, steam machinery, and ships built by contract:—				
		Sec. 1. Storekeeper-general of the navy	1,134,572	1,164,100	—	29,528
		" 2. Controller of the navy	564,700	882,212*	—	317,512
11	62	New works, buildings, machinery, and repairs	527,985	444,298†	83,687	—
12	76	Medicines and medical stores	64,800	64,350	450	—
13	77	Miscellaneous services	103,925	102,320	1,605	—
		Total for the effective service	8,658,205	9,006,672*	133,142	481,609
14	80	Half-pay, reserved half-pay, and retired pay to officers of the navy and royal marines	698,195	703,565*	—	5,370
15	85	Military pensions and allowances	507,211	490,201	17,010	—
16	93	Civil pensions and allowances.....	208,033	193,983	14,050	—
		Total for the naval service	10,071,644	10,394,421*	164,202	486,979
		For the service of other departments of Government—				
17	97	Army department (conveyance of troops)..	320,580	314,230	6,350	—
		Grand total	10,392,224	10,708,651*	170,552	486,979
		Net decrease..	—	—	—	316,427

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* These sums include the votes in the supplementary estimate for increasing the full pay, and for the extension of naval retirement of officers of the navy, amounting to 61,041*l.* (see Parliamentary Paper, 13th May, 1864, No. 294), and in the supplementary estimate for purchase and completion by contract of the El Tousson and El Monassir, iron-clad ships, amounting to 220,000*l.* (see Parliamentary Paper, 7th June, 1864, No. 374).

† The original amount of this vote, as shown in the estimates for 1864-65, viz., 449,298*l.*, was reduced by 5,000*l.* in Committee of the House of Commons on 2nd May, 1864.

TABLE V.—*Ministère de la Marine et des Colonies. Budget Ordinaire des Dépenses de l'Exercice* 1865.

Chapitres.	Sections.	Crédits Demandés pour l'Exercice 1865.	
		Par Chapitre.	£ Sterling.
	SECTION 1.	fr.	£
I.	Administration centrale (personnel)	1,062,300	42,492
II.	" (matériel)	267,300	10,692
III.	Conseils, inspections générales et contrôle central	497,500	19,903
	SECTION 2.		
IV.	Etats-majors et équipages	28,173,500	1,126,942
V.	Troupes	9,047,500	361,900
VI.	Corps entretenus et agents divers scientifiques	5,947,900	237,917
VII.	Maistrances, gardiennage et surveillance	2,790,700	111,630
VIII.	Hôpitaux	2,245,400	89,818
IX.	Vivres	13,884,300	555,372
	SECTION 3.		
X.	Salaires d'ouvriers	17,000,000	680,000
XI.	Approvisionnements généraux de la flotte	35,334,000	1,413,360
XII.	Travaux hydrauliques et bâtiments civils	8,013,500	320,540
XIII.	Poudres	294,800	11,794
	SECTION 4.		
XIV.	Justice maritime	147,500	5,902
XV.	Ecole navale et boursiers de la marine	225,000	9,000
XVI.	Service hydrographique et scientifique	410,000	16,400
XVII.	Frais généraux d'impressions et achats de livres	489,400	19,576
XVIII.	" de voyage et dépenses diverses	2,227,600	89,106
XIX.	Traitements temporaires	100,000	4,000
XX.	Chiourmes (the convict establishment)	128,000	5,120
	Cost of French navy	128,286,200	5,131,465
	SECTION 5.		
XXI.	Personnel civil et militaire aux colonies	14,608,700	584,348
XXII.	Matériel civil et militaire aux colonies	3,114,500	124,580
XXIII.	Service pénitentiaire à la Guyane	5,009,000	200,360
XXIV.	Subvention au service local des colonies	2,223,500	88,940
—	Dépenses des exercises clos et périmés (pour mémoire)	—	—
—	Le Ministre Secrétaire d'Etat de la Marine et des Colonies	—	—
	Total général	153,241,900	6,129,693

VII.—COMPARATIVE COST OF THE FRENCH AND ENGLISH DEPARTMENTS.

The first section in the French budget has three chapters. Section 2 has six chapters; the first four of which comprise the substance of the English Vote No. 1, wages to officers, seamen and marines, transports and coast guard, with the exception of Article 4, for clothing 25,592 seamen, at 96 frs. each annually, and 1,710 boys, at 81 frs., and 4,160 seamen and marines on shore; total 3,019,736 frs., 120,789*l.* (*Vide* Appendix, Table IV). This charge in the English estimate for clothing gratuitously is joined with Vote 2, for "Victuals;" the amount being 128,385*l.*, including marines, 715,712*l.*; but neither numbers to be clothed nor price per suit are given. The estimate for seamen's clothing and soap and tobacco is 201,657*l.*, but this sum is not entered, as the charges against wages will meet it.

The combatant force of the two navies having been placed in juxtaposition in Table III, I have, in chapters iv, v, vi and vii of section 2 of the French budget, put together the charges corresponding to a certain extent to Vote 1 of the English estimate for pay and allowances for this combatant force. The total for the English vote is 2,945,006*l.*, exclusive of victualling and clothing. For the French the charge is 45,959,745 frs., 1,838,390*l.*; but this embraces much more than the English vote. The first article of chapter iv gives a complete list of the officers of the French navy, with their respective pay. The total number is 2,174 (*vide* Appendix, Table III), in the active list, and 34 vice and rear-admirals in reserve. There are only two admirals with salaries of 1,200*l.* per annum; 17 vice-admirals, with pay of 600*l.* per annum; and 30 rear-admirals, with pay of 400*l.* per annum; 65 captains of the first class, 200*l.* per annum; 65 of second class, at 180*l.* per annum; 270 captains of frigates, 140*l.* per annum; 375 lieutenants of the first class, 100*l.* per annum; 375 lieutenants second class, 80*l.* per annum; 600 enseignes de vaisseau, 60*l.* per annum; the rest are "aspirants" of the first and second class, with 40*l.* and 24*l.* per annum each. The vice-admirals in reserve have 360*l.* per annum, and the rear-admirals 240*l.* per annum. The general staff consists of 1 vice-admiral, whose pay is 15,000 frs., or 600*l.*, with 3,800 additional pay and 21,900 frs., or 876*l.* for table money. An English vice-admiral in commission receives 1,460*l.* pay and 1,095*l.*, or 27,375 frs., for table money. The French rear-admirals, of whom there are 9 in the staff, have 10,000 frs., or 400*l.*, salary, and 2,000 frs. additional pay, and 18,153 frs., 726*l.*, for table money, and there are 17 captains of frigates and 10 lieutenants. An English rear-admiral has 1,095*l.* pay, and table money from 547*l.* 10*s.* to 1,642*l.* 10*s.* In the English estimates there are 2 admirals in commission as commanders-in-chief, salary 1,825*l.*, table money 1,095*l.*, total 2,920*l.*; and 4 vice-admirals, having 1,460*l.* sea pay, and 1,095*l.* table money, total 2,555*l.*; 1 vice-admiral commanding-in-chief abroad, pay 1,460*l.*, table money 1,642*l.* 10*s.*, total 3,102*l.* 10*s.* Also 9 rear-admirals, varying from 2,737*l.* 10*s.*, the pay of the commander-in-chief abroad, to sea pay, 3*l.*, and table money 3*l.*, per day, total per annum 2,190*l.* Commander-in-chief at home has 1,095*l.* pay and 1,095*l.* table money, total 2,190*l.*, and 2 rear-admirals superintending dock yards, with table money, one has 1,825*l.* per annum, and the other has 1,642*l.* 10*s.* per annum, their table money being respectively 730*l.*, and 547*l.* 10*s.* Commodores, first and second class, 365*l.* and 182*l.* 10*s.* respectively, with similar amounts for table money; 86 captains, according to seniority from 365*l.* to 547*l.* 10*s.*, besides command money; 372 lieutenants, at 182*l.* 10*s.* per annum; 258 midshipmen, at 31*l.* 8*s.* 9*d.* per annum; gunners, boatswains, carpenters, from 63*l.* to 120*l.* per annum; petty officers and seamen, from 73*l.* to 16*l.* 14*s.* 7*d.* per annum.

Chapter v of the French budget, details the organization and numbers of the marine infantry, artillery, &c. Cost of clothing from 33 frs. 33 cents to 59 frs. 65 cents per man (*vide* Appendix, Tables IV and V); number of rations of warming (*vide* Table VI), at 0·0430 to 0·6457 per ration; cost of barrack accommodation for 11,564 men in France, at 12 frs. per man, and 7,097 men in the colonies, at 18 frs. per man, also a charge of 24,000 frs. for repairs of iron bedsteads. As a specimen of the extreme minuteness with which prospective charges are estimated, in chapter iv, article 6, there is a charge of 3,110 frs. for warming barrack chambers for 113 days in winter, for 4,024 rations of wood or coal, at 0·7718 per ration. Chapter vi has fourteen articles, and details the charge for maritime prefects, who are vice-admirals, at Brest, Toulon, Rochefort, Cherbourg and Lorient; a corps of marine engineers, marine commissariat; the 4 commissaries-general of the first class receiving only 400*l.* per annum each; the total number employed in the commissariat being 434 persons: 5 commissaries-general, second class, get 320*l.* per annum each; 26 commissaries of the first and second class, from 180*l.* to 200*l.* per annum; 33 assistant commissaries, from 120*l.* to 160 per annum; 132 sub-commissaries from 80*l.* to 100*l.* per annum; and 234 *assistant* commissaries at 60*l.* per annum. The English navy has not a separate marine commissariat, but has four victualling yards, Deptford, Gosport, Plymouth, and Haulbowline, the first three under captains-superintendent, with salaries of 800*l.* per annum each, and the last under a storekeeper, with 500*l.* per annum. The French chaplain's establishment numbers 67, the chaplain-general receiving 400*l.* per annum, and the chaplains 100*l.* per annum. The English chaplains have from 182*l.* 10*s.* to 292*l.* per annum, and the chaplain-general 821*l.* 5*s.* per annum. The French medical establishment has 544 doctors, surgeons and pharmaciens; the inspector-general receiving 400*l.* per annum, and directors, or deputy inspectors-general, 320*l.* per annum. The English director-general of the medical department, for whom there is not any corresponding office in the French budget, has a salary of 1,300*l.* per annum. The third article of chapter v gives the salaries of 19 hydrographical engineers, and the fourth article the salaries of 46 examiners and professors of hydrography. The charge for both departments being 11,130*l.* per annum.

VIII.—FRENCH SCIENTIFIC CONSTRUCTION BRANCHES.

The French government provide liberally in numbers of persons for the scientific constructive branches of the navy, by a corps denominated maritime engineers. This body is comprised in article 2 of chapter vi: 2 inspectors-general, 10 directors of construction, 40 engineers, 70 sub-engineers, 10 pupils, 6 principal constructors, 10 draughtsmen, 3 sub-draughtsmen, and 2 professors of English (*vide* Appendix, Table VII). But my limits do not permit me to give the details of the whole of the 14 articles of chapter vi, and the French budget must be referred to for proof of the liberal and appropriate manner in which provision is made for the scientific, medical, religious and subsistence wants of the French navy; the number of officers employed in the different departments being 1,569, and men 81, the total being 1,650, at a cost of 237,917*l.*

Chapter vii of section 2 has seven articles, and corresponds, to a certain extent, with Votes 6 and 7 of the English estimate. "Her "Majesty's establishments at home and abroad," embracing the dockyards and the hospitals, but for which there is a separate chapter, No. viii, in the French budget. In article 1, chapter vii, there are 130 masters of construction provided for, and varying numbers of instructors, foremen or leading men, at founderies and forges, watchmen of magazines, 282 telegraph and signal men, instructors at normal and elementary schools; and article 7 provides for a fire brigade of 448, masters or foremen, and men, the 9 foremen only receiving 44*l.* per annum each; and the total number employed in what may be called the home establishment in France, is 3,306, at a charge of 111,630*l.* The British establishments at home, Vote 6, cost 192,415*l.*, in 9 naval yards, &c., including the 4 hospitals and 6 infirmaries, which, in the French budget, have a chapter to themselves. The numbers of officers, masters, foremen and leading men, clerks, &c., employed in the English dockyards and victualling establishments, is only obtained by the irksome process of counting the designations of the persons employed, the numbers not being tabulated. The total number I found about 516 in the dockyards and victualling establishments, besides temporary clerks, of which the number is not given in each establishment. Similar tables to No. VIII in the Appendix, of the numbers of workmen and artificers in the English estimates, would save this labour of counting.

Each dockyard has its marine barrack establishment, with barrack master and subordinates.

IX.—BRITISH ESTABLISHMENTS AT HOME.

An abstract is given of the English Vote 6, of the total cost of naval yards 132,621*l.*, victualling 21,996*l.*, medical establishments 14,238*l.*, transport establishment 1,252*l.*, marine barracks 14,163*l.*, marine infirmaries 5,433*l.*, and the naval prison Lewes 2,742*l.*, total 192,415*l.* This abstract would be satisfactory if a column were added giving the numbers of persons employed in each establishment as is the case in the French budget.

X.—BRITISH ESTABLISHMENTS ABROAD.

Vote 7 for Her Majesty's establishments abroad, embraces naval yards at Gibraltar, Malta, Hong Kong, &c., 9 in number, and amounts to 37,332*l.*, the greatest charge being for Malta, 7,276*l.*, and next Hong Kong 5,895*l.* The abstract of this vote also wants a column of numbers employed.

XI.—FRENCH HOSPITALS.

I have stated that the medical establishments and hospitals are included in the English Vote 6, but in the French budget a chapter viii, of section 2, is devoted to them under the head of "Hôpitaux" (*vide* Appendix, Tables VIII and IX). This chapter has five articles, the total cost is 2,245,447 frs., 89,818*l.* The total number of persons employed is 481, that is to say, 368 nurses, including 112 sisters of charity and 209 other nurses (and 113 not nurses), and this number includes 3 botanical gardeners and 27 gardeners, for the botanical gardens attached to the hospitals. Provisions of this kind does not appear on the face of the English naval estimates. The total number of persons admissible to the French hospitals is 52,339, of which one-twentieth is supposed to be constantly in hospital (*vide* Appendix, Table IX), the cost being 10,283*l.* The victualling, warming, lighting, drugs, &c., are put down at 47,457*l.* in article 2, and the other three articles comprise charges for the sick in the colonies and Algeria amounting to 32,077*l.*

XII.—ENGLISH HOSPITALS.

In the English estimate the home hospitals of Haslar, Plymouth, Haulbowline, and Yarmouth (lunatic asylum), together with the marine infirmaries of Woolwich, Chatham, Portsmouth, Plymouth, and Deal, are included in Vote 6, "Her Majesty's establishment at "home," the hospitals being put down at 14,238*l.*, and the infirmaries at 5,433*l.* In all these cases the number of medical officers and the office establishments are given, but not the number of nurses and attendants, nor the cost of medicines, as in the French budget; there being in the English estimate a separate Vote 12, for medicines and medical stores, charged at 64,800*l.*, making a total of 84,471*l.*, that of the French budget being 89,818*l.* The provision for the sick, therefore, considering the relative numbers of the two navies, would seem to be on a broader basis in the French than the English navy.

XIII.—FRENCH VICTUALLING.

The last chapter ix of section 2, of the French budget, embraces the charge for provisions; the amount of which is 555,372*l.*, and a tabular statement is given of the exact number of the grades entitled to rations.

XIV.—ENGLISH VICTUALLING AND CLOTHING.

The charge for provisions and clothing in the English estimates Vote 2, amounts to 1,197,309*l.* for provisions, and 128,385*l.* for clothing, total 1,325,694*l.* Chapter ix of the French budget has three sections only, the first for the number employed in the commissariat depôts is 67 persons, at a cost of 1,724*l.*, section 2, purchase of provisions 504,328*l.*, section 3, transport and labour, &c., 4,932*l.*

XV.—COST OF FRENCH RATIONS.

The number of persons entitled to rations in the French naval establishments is perspicuously and admirably shown in a comprehensive table in the Appendix No. 12, the total number on the list, including 2,800 convicts and 422 custodiers, is 63,598; but from this is deducted 15,328 officers and others not entitled, leaving 48,270 to be rationed, and the charge is 13,884,307 frs., or 555,372*l.* Sailors employed in the tropics, and those employed beyond the 50th degree of latitude, have different rations. In the tropics and in the hot weather in Europe, more fluids, wine, vinegar, &c., are given, and beyond the 50th degree of latitude more solids. The mean cost of the several rations, as given in the Table 12, that of the seamen and marines afloat, is nearly a franc per ration, 0·9723 or 9½*d.* A ration of bread on shore is calculated at 0·2246 frs., or 2¼*d.*, but the convict's full ration is 0·4501 frs., nearly 4½*d.* In the English estimate, Vote 2, provisions are asked for 60,000 seamen, boys, and coast guard, for the whole year; and for 5,500 naval coast volunteers, and 16,000 reserve seamen while afloat at drill, and 713 men and boys on board steam tugs, &c., but the number of days for these last to be victualled is not stated, total 82,213, and the charge is 1,197,309*l.* The charge per ration is not given, nor is there a varying ration stated according to the climate in which the seamen or marines may be employed, nor between service afloat and service ashore. The victualling establishments in England, it has been shown, are in the four dockyards in Vote 6, and the cost of the establishments is 21,996*l.*, and employ 22 officers and 64 clerks and foremen, besides 414 labourers, millers, coopers, &c. The charge for clothing is joined to Vote 2, and amounts to 128,385*l.*, but the numbers to be clothed are not given; the seamen would seem to have to pay for their clothing; but various sums, to the amount of 40,555*l.*, are asked for to make gratuitous issues to seamen, boys, and marines, under certain contingencies. In the French budget (*vide* Appendix Tables IV and V), clothing is asked for 25,432 seamen and marines, and 1,710 boys, costing 3,019,736 frs., 120,780*l.*, and 864,191 frs., 34,567*l.*, for troops.

XVI.—FRENCH COST OF ARTIFICERS, &C.

Chapter x commences section 3 of the French budget, and corresponds to Vote 8 of the English estimates, "Wages of Artificers, &c.," and embraces the salaries of workmen at task work and daily wages, in all the naval establishments of France; the amount is 17,000,000 frs., 680,000*l.*, but the numbers of the workmen and artificers employed are not given; the only instance in the budget in which this necessary information is defective, and in which the English estimates are vastly superior to the French budget, by the insertion of three admirable tables in No. 9 of the appendix, which give the authorized establishments in each of the seven dockyards for shipwrights, joiners, sawyers, smiths, riggers, &c.

XVII.—NUMBER OF ENGLISH ARTIFICERS, WORKMEN, &C.

The total number of established workmen in Table I is 9,611. Table II of the estimates gives the number and distribution of the hired artificers and labourers at the several dockyards, amounting to 5,792, so that the total number of established and hired workmen of all classes is 15,403. Table III gives the number of competent workmen in the four steam factories at Woolwich, Sheerness, Portsmouth, and Devonport, amounting to 2,894, so that the total number of skilled workmen and labourers in all the dockyards is 18,297, independently of 414 persons at the four victualling yards, and of the officers, masters, foremen, and leading men in each dockyard, amounting to about 515, besides occasional clerks, whose numbers are not given.

XVIII.—ENGLISH AND FRENCH DOCKYARD POLICE.

The above numbers are also independent of the police divisions for the dockyards, amounting to 547, and one inspecting superintendent, at a charge 38,295*l.* The French have 17 officers and 365 gendarmerie for their dockyards. The total charge for wages of artificers employed in the British establishments at home is 1,158,797*l.*, abroad 72,586*l.*, as contrasted with 680,000*l.* for French workmen and artificers.

XIX.—MATERIALS FOR THE ENGLISH AND FRENCH NAVIES.

Chapter xi of section 3 of the French budget, corresponds to Vote 10 of the English estimates, for the purchase of stores of all descriptions for shipbuilding, and all the wants of the dockyards, materials for the artillery and transport service, &c. The French budget demands 35,334,000 frs., 1,413,360*l.*, Vote 10 of the English estimate, which is divided into two sections, the storekeeper general of the navy amounts to 1,134,572*l.*, and section 2 controller of the navy to 564,700*l.*, total 1,699,212*l.*, but to this sum must be added 527,985*l.* for new works in the English Vote 11, making the English total 2,227,257*l.*, as against the French 1,733,900*l.*, including 320,540*l.* in class xii for new works. But the French navy pays for its own cannon, arms, powder, and projectiles, which the English navy does not. Section 2 of the English controller's department corresponds with chapter xii of the French budget for steam machinery, building ships, &c., amounting to 8,013,500 frs., 320,540*l.*, and making together with chapter xi a total of 1,733,900*l.*; but section 2 of the English estimates provides for the purchase and completion of four iron-clad ships by contract, at an estimated cost of 1,167,200*l.*, of which 1,016,752*l.* will probably have been expended on the 31st March, 1865, and 130,000*l.* is asked for in 1865, for the Minotaur, Agincourt, Northumberland, and Prince Albert. In neither English nor French estimates are the quantities nor the prices given of the stores, timber, metals, hemp, canvas, coals, &c. Lump sums only are asked for, and the House of Commons and the French Chamber have no means of forming an opinion whether the quantities and sums to cover the assumed cost are necessary or not, nor will the House of Commons ever be able to form a correct judgment on the subject until the balances in quantities of annual stock-taking be laid before the House, simultaneously with the estimates. The absence of quantities and prices in the French budget is unusual, as in the military budget the quantities and prices of the metals required for making cannon and the number turned out, the materials for gunpowder, quantities and prices of different description of clothing, &c., are all given in the minutest details, and similar details will be observable in several of the tables in the Appendix to this paper.

XX.—ENGLISH NEW WORKS.

Vote 11 of the English estimates for new works, improvements and repairs of yards, &c., approximates in character to chapter xii of the French budget, the amount of which as stated is 8,013,500 frs., or 320,540*l.* only, and is chiefly for hydraulic works and machines. The English estimate requires the sum, for 1865-66, of 527,985*l.*, but the total sum sanctioned and ultimately to be expended in all the dockyards, is 5,641,700*l.* The chief work is the extension and improvement of the yard at Chatham, assisted by convict labour, and the estimate for which is 943,876*l.*, besides 306,124*l.*, a contract for additional works, of which 115,000*l.* has been voted, leaving 1,026,120*l.* to be expended in future years. The next great item is for the extension of the naval yard at Portsmouth, at a proposed cost of 1,500,000*l.*, for which 7,500*l.* only has been voted; 20,000*l.* is asked for 1865-66, leaving 1,477,500*l.* for future years. The docks and basins at Keyham are to cost 1,425,000*l.*, of which 1,296,500*l.* has been voted; 21,000*l.* is asked for in 1865-66, leaving 38,140*l.* for future years. At Plymouth, the barrack estimate is 166,333*l.*; of this sum 38,440*l.* remains to be called up. At Portsmouth, the marine artillery barracks are to cost 167,301*l.*, of which 97,000*l.* has been voted; 21,000*l.* is asked for, leaving 52,210*l.* to be called up. Altogether 3,047,455*l.* are required to complete works already sanctioned in the different yards at home and abroad.

XXI.—GUNPOWDER.

Chapter xiii of the French budget comprises the estimate for gunpowder for the service of the navy, and for military service in the colonies. Neither quantities nor prices per kilogramme are given, as in the French military budget, but a lump sum of 294,847 frs., 11,794*l.*, only is put down. In the English navy estimates there is not any charge for gunpowder, cannon, arms or projectiles, the whole being supplied from the army estimates, which is unfair, as the army estimates are necessarily swollen by disbursements which properly belong to the navy.

XXII.—MARITIME JUSTICE.

Chapter xiv commences section 4 of the French budget with maritime justice, at a cost of 3,902*l.* per annum. 32 persons are permanently appointed for the different maritime tribunals of first instance and appeal, with 5 imperial commissaries (corresponding to British judge advocates), for the first tribunals, and 6 commissaries for the appeal tribunals; the highest salary is 180*l.* per annum, and the lowest 48*l.* per annum. They have also lodging money. In the English navy, justice is administered by means of courts-martial, and legal advice is obtained from an advocate-general and a department in the Admiralty Office. In Vote 3, a solicitor is charged 1,600*l.* per annum, and 1,000*l.* per annum for office and clerks; and 8,000*l.* is estimated for fees to counsel; and 100*l.* per annum (besides fees), is given to the counsel and judge-advocate for affairs of the admiralty and navy.

XXIII.—NAVAL SCHOOLS.

Chapters xv, xvi and xvii of section 4, correspond with Vote 5 of the English estimates, "Scientific Branch." The first article of chapter xv provides for the expenses of the naval schools, for food, clothes, books, instruments and prizes, &c., for the pupils, and amounts to 6,040*l.* per annum.

XXIV.—BURSARIES.

Article 2 provides bursaries for pupils at the communal colleges at Cherbourg, Lorient, Rochefort, Toulon and the Lycæ at Brest, amounting to 2,960*l.*

XXV.—FRENCH HYDROGRAPHIC SERVICE.

Chapter xvi provides for the hydrographic service; for the hire of vessels; for engraving, provision and purchase of charts, &c.; for tidal observations, 680*l.*; office charges, &c., the total being 16,400*l.* Chapter xvii provides for printing and binding almanacs, bulletin of the navy, purchases for the maritime libraries, &c., 17,980*l.*; to this is added subscription to the "Moniteur" and other newspapers, cost of advertisements, and finally, purchase of books for the libraries at the naval yards, making a total of chapter xvii of 19,576*l.*; the total of these last three chapters, providing for the educational and scientific objects of the French navy, amounts to 44,976*l.*

XXVI.—ENGLISH SCIENTIFIC BRANCH.

The total of the English scientific branch, Vote 5, is 70,042*l.*; but it embraces the cost of the Greenwich Observatory, 4,414*l.*;* and that of the Cape of Good Hope, 1,674*l.*; and the Compass Department, 764*l.*; the School of Naval Architecture, 4,000*l.*; Libraries and Museums, 100*l.*; Director of Education for the Admiralty, 964*l.* The English hydrographic department costs 18,725*l.*; but to this is to be added 31,851*l.* for surveys, making a total of 50,576*l.*; and in the Votes 1, 2, 8, 10, 12 and 13, is included a charge of 51,151*l.* for officers and men and cost of stores for surveys; so that the cost of surveys and scientific appliances is, in fact, 101,727*l.* annually. The department, in 1864, sold 119,138 charts and 2,248 books, and realized for them 6,420*l.* The superintendent of the "Nautical Almanac" has 500*l.* per annum; and the total cost of his establishment is 2,189*l.* per annum, exclusive of paper and printing; but, in 1864, 21,234 copies of this valuable work were sold. Under this vote there is a charge of 3,561*l.* for scientific education at the Royal Naval College at Portsmouth.

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* The celebrated Paris Observatory is not charged in the marine budget.

XXVII.—VARIOUS CHARGES.

Chapter xviii of the French budget embraces disbursements for various objects—postage money, travelling expenses, pilotage, cost of medals, loss on exchange, 10,000*l.* for the encouragement of fisheries, and, as a contrast to the 30,000*l.*, granted annually for secret service money, under the English Government, in the Civil Service estimates, the French navy requires only 400*l.* for secret service. The total amount of this chapter is 89,106*l.* There is not any specific vote in the English estimate corresponding to chapter xviii, but most of the charges occur in one or other of the seventeen votes.

Chapter xix is for temporary charges, and amounts only to 4,000*l.*

XXVIII.—CONVICT ESTABLISHMENT.

Chapter xx embraces the convict establishment. The total charge for 2,800 convicts is 5,120*l.*, including clothing, but exclusive of provisions; 200*l.* is put down to be distributed to convicts on their release by expiry of term, or on being pardoned; and 80*l.* is charged as rewards for good conduct. The English convict establishment is not charged in the navy estimates.

XXIX.—FRENCH COLONIES.

The remaining four chapters of the French budget, constitute section 5, and contain the details of the cost of the administration of the twelve French colonies, Martinique, Guadeloupe, Reunion, the penal settlement of Guyane, Senegal, Gold Coast, Saint Pierre and Miquelon, St. Mary of Madagascar, Mayotte, Taiti, Novelle, Caledonie and India. Algeria and Cochin China are not classed as colonies. The total charge for the colonies is 24,955,700 frs., or 998,228*l.* Guyane is properly a penal settlement, and the charge is 1,474,440 frs., or 58,978*l.* India, that is to say Pondicherry and Mahi, cost only, for their civil and military government, 543,580 frs., or 21,743*l.*

XXX.—TOTAL COST OF THE ENGLISH AND FRENCH NAVIES.

The twenty-fourth chapter closes the French budget; the total charge, as previously shown, inclusive of the colonies, being 153,242,332 frs., or 6,129,643*l.* That for the English navy alone being 10,152,905*l.* (giving credit for 239,319*l.*, the estimated amount of extra receipts and repayments). But the English navy estimates are swollen by charges for the non-effective branches. Half-pay, reserved half-pay, and retired half-pay to officers of the navy and royal marines, 698,195*l.*; military pensions and allowances, 507,211*l.*; and civil pensions and allowances, 208,033*l.*, to the amount of 1,413,439*l.* This amount manifests an exceedingly liberal provision for large numbers of the disabled, and for servants qualified for pension in every class of the naval service. The following is a running commentary upon the charge for the non-effective list.

XXXI.—NON-EFFECTIVE LISTS.

The English have 87 admirals in the active half-pay list, and 118 in the reserve list, and 108 in the retired list. The total number of the officers in the half-pay list, including surgeons, paymasters, secretaries, naval instructors and chief engineers, is 1,125. On the reserved list there are 401 officers, &c., and on the retired list 1,715, and marine officers 275, making a total of 3,516, at an annual charge, for 1865-66, of 698,195*l.* The military pensions and allowances amount to 507,211*l.*, and embrace pensions for officers for distinguished services; also to 197 widows of officers slain; to 3,175 widows of officers and warrant officers who have died; to 228 widows of marine officers; to 90 disabled officers; to 7,882 petty officers and seamen not provided for in Greenwich Hospital; and to 5,281 marines. The civil pension charge is 175,027*l.*, and embraces 452 of the commissioned, marine and dockyard officers, and 3,001 artificers; and 977 coast guards and men, at a cost of 32,496*l.* The total civil pension list being 208,033*l.*

XXXII.—FRENCH PENSION LIST.

The French have an invalid or half-pay fund, which is available both to the officers and men of the navy and commercial marine. It is derived from a deduction of 3 per cent. from the pay of all ranks, from a percentage on prize money, inscription on the public funds, money in the Bank of France, and other sources. The total for 1865 is 15,950,000 frs., 638,000*l.*; and the whole is allotted. 5,302,701 frs. is derived from the 3 per cent. upon the pay of the navy, and 1,470,000 frs. from the commercial marine. Recipients must be 50 years of age, and have been twenty-five years engaged in the sea service. The number of recipients are not given, but they embrace the wounded, also widows and orphans.

XXXIII.—CONCLUSION.

The preceding condensed view of the combatant force of the French and English navies should satisfy the most nervous Francophobist that neither the past status, nor the present, nor the prospective condition of the two fleets, justify, in the remotest degree, any doubt respecting the permanent superiority of the English as a maritime nation. This dominancy is, indeed, as inherent in the genius and aspirations of the whole people as the love of military glory has been from all times past, and is still, the inherent character of the French people. Each nation has its own distinguishing characteristic; and the will of kings or ministers could only raise temporarily a question whether the bent of a nation could be moulded to their will.

With respect to the comparative cost of the French and English navies, namely 10,392,224*l.* and 5,131,465*l.*, the disproportion in their respective forces accounts for the greater part of the difference. The greatly higher pay and allowances of officers and men in the English navy is another cause; and to these may be added the cheaper rate at which the French navy is provisioned and clothed. The fact, however, cannot be disguised, that the expenditure in the English dockyards for materials and labour for many years past has been, and still is, of a magnitude which has not only caused surprise, but led to grave doubts, whether an efficient control and supervision and economical disbursements have been maintained. These doubts were converted into certainties by Mr. Seely, the member for Lincoln, in his place in the House of Commons, in the past session of Parliament, proving from the dockyard accounts, which had been unreservedly submitted to his inspection by the Admiralty, that larger sums, or sums nearly as large, had been laid out upon the repairs of many vessels than would have been expended in building them new; and that annually, for some years past, materials in stock to the value of vast sums, which ought to have been accounted for in the labour books as worked up in naval constructions, were not observable in the records; but whether the deficient materials had been left annually in store or were altogether wanting, could only be determined by an annual store taking, which hitherto has not been the practice, but which, it is to be hoped, will be insisted upon for the future by the House of Commons.

The French budget cannot be too highly commended for its elaborate details, summaries and recapitulations of chapters, and particularly for its numerical table (No. XIII), of all officers, military and civil, and men, on the permanent establishment of the French navy, as exhibited in the Appendix, a model which it would be satisfactory were it applied to the English estimates. But it would be doing an injustice to two late Lords of the English Admiralty, Messrs. Stanfield and Childers, were it not stated that under their zealous supervision very great improvements have recently been made in the English estimates, particularly in the minute analyses of Vote 1, for wages, and in the numerical tables of workmen, artizans, &c., and in summaries of some of the votes; and the explanation of the vote for public works, is much superior to the French explanation on that head.

In closing this paper, I believe it is made manifest that the combatant force and efficiency of the English navy are of a character to guarantee the maintenance of that prestige which has hitherto placed England at the head of the maritime powers of the world.

APPENDIX.

TABLE I.—*Chapitre 3. Conseils, Inspections Générales et Contrôle Central.*

Effectif.	Nature des Dépenses.	Traitement Fixe.	Suppléments de Résidence à Paris et Indemnités de Lodgment.	Dépense.	Crédits	
					Demandés pour l'Exercice 1865.	Alloués pour l'Exercice 1864.
	Chapitre 3. *Conseils, Inspections Générales et Contrôle Central.* ARTICLE 1.—Conseil d'Amirauté. *Membres Titulaires.*	fr.	fr.	fr.	fr.	fr.
Pour mémoire	4 vice-amiraux	20,000	—	80,000	—	—
	1 contre-amiral	15,000	—	15,000	—	—
	1 directeur des constructions navales de 1re classe	15,000	—	15,000	—	—
	1 commissaire général de la marine de 1re classe	15,000	—	15,000	—	—
	1 commissaire de la marine secrétaire	9,000	—	9,000	—	—
				134,000		
Pour mémoire	*Membres Adjoints.* 2 capitaines de vaisseau de 1re classe	5,000	2,440	14,880	—	—
	Total de l'Article 1er	—	—	148,880	148,880	148,880

Effectif.	Nature des Dépenses.	Appointements par An.	Suppléments Spéciaux.	Total pour Grade.	Dépense Présumée.	Crédit	
						Demandés pour l'Exercice 1865.	Alloués pour l'Exercice 1864.
	ARTICLE 2.—*Conseil des Travaux.*	fr.	fr.	fr.	fr.	fr.	fr.
* Pour mémoire	1 vice-amiral président	20,000	—	20,000	20,000	—	—
	2 contre-amiraux, membres du conseil	15,000	—	15,000	30,000	—	—
	1 capitaine de vaisseaux de 1re classe idem	5,000	1,000	6,000	6,000	—	—
	2 ingénieurs des constructions navales de 1re classe idem	5,000	2,500	7,500	15,000	—	—
	1 sous-ingénieur des constructions navales secrétaire	3,000	1,950	4,950	4,950	—	—
					75,950		
	A Ajouter. Indemnité de logement des officiers généraux	—	—	4,860	5,460	—	—
	Abonnements pour frais de bureau de 2 ingénieurs et d'un sous-ingénieur du génie maritime	—	—	600			
	Total de l'Article 2	—	—	—	81,410	81,410	81,410

* Les membres du conseil des travaux figurent, pour l'effectif, aux corps auxquels ils appartiennent.

Table II.—*Suite du Chapitre 3. Conseils, Inspections Générales et Contrôle Central.*

Effectif.	Nature des Dépenses.	Appointements par An.	Suppléments Spéciaux.	Dépense Présumée.	Crédits Demandés pour l'Exercice 1865.	Crédits Alloués pour l'Exercice 1864.
		fr.	fr.	fr.	fr.	fr.
	Article 8.—Contrôle Central.					
* Pour mémoire	1 inspecteur en chef de 1re classe	20,000	—	20,000	—	—
	1 „ 1re classe	5,000	1,000	6,000	—	—
	1 „ 2e „	4,500	900	5,400	—	—
	1 „ adjoint	3,500	700	4,200	—	—
		33,000	2,600	35,600		
2	Commis à 2,400 frs. et 2,700 frs.	5,100	—	5,100	—	—
		38,100	2,600	40,700		
	A Ajouter.					
	Indemnité de logement	—	—	3,960	—	—
2	Total de l'Article 8	—	—	44,660	44,660	44,660

* Les officiers attachés au contrôle central compètent, pour l'effectif, aux corps de l'inspection de la marine, chapitre 6.

Récapitulation du Chapitre 3. Conseils, Inspections Générales et Contrôle Central.

Articles.	Nature des Dépenses.	Crédits Demandés pour l'Exercice 1865.	Crédits Alloués pour l'Exercice 1864.
		fr.	fr.
1	Conseil d'amirauté	148,880	148,880
2	„ des travaux	81,410	81,410
3	Inspection générale de l'artillerie	77,490	77,490
4	„ des troupes d'infanterie	70,565	70,565
5	„ du génie maritime	28,600	28,600
6	„ des travaux hydrauliques	27,500	27,500
7	„ du service de santé	18,460	18,460
8	Contrôle central	44,660	44,660
	Total du Chapitre 3	497,565	497,565

Récapitulation de la Section 1.

Nature des Dépenses.	Crédits. Demandés pour l'Exercice 1865.	Crédits. Alloués pour l'Exercice 1864.	Différences au Budget de 1865. En Plus.
	fr.	fr.	fr.
Chapitre 1. Administration centrale (personnel)	1,062,300	1,059,900	2,400
„ 2. „ (matériel)	267,300	267,300	—
„ 3. Conseils, inspections générales et contrôle (central)	497,565	497,565	—
Total de Section 1	1,827,165	1,824,765	2,400

TABLE III.—*Chapitre* 4. *Etats-Majors et Equipages.*

Effectif.	Nature des Dépenses.	Appointements à Terre par An.	Montant Présumé de la Dépense.
	SECTION 2.	fr.	fr.
	Chapitre 5.—*Etats-Majors et Equipages.*		
	ARTICLE 1.—Officiers de la Marine.		
	SECTION 1.—*Solde d'Activité.*		
2	Amiraux	30,000	60,000
17	Vice-amiraux	15,000	255,000
30	Contre-amiraux	10,000	300,000
130	65 capitaines de vaisseau de 1re classe ...	5,000	325,000
	65 „ „ 2e „	4,500	292,500
270	Capitaines de frégate	3,500	945,000
750	375 lieutenants de vaisseau de 1re classe	2,500	937,500
	375 „ „ 2e „	2,000	750,000
600	Enseignes de vaisseau	1,500	900,000
300	200 aspirants de 1re classe	1,000	200,000
	100 „ 2e „	600	60,000
2,099		—	5,025,000
	A Ajouter.		
75	50 lieutenants de vaisseau de 1re classe, en résidence fixe	2,500	125,000
	25 lieutenants de vaisseau de 2e classe, en résidence fixe	2,000	50,000
2,174		—	175,000
	SECTION 2.—*Solde de Réserve.*		
Mémoire	14 vice-amiraux	9,000	136,000
	20 contre-amiraux	2,000	120,000
		—	256,000

TABLE IV.—*Suite du Chapitre* 4. *Habillement des Equipages à Terre et à la Mer.*

Nature des Dépenses.	Officiers, Mariniers et Marins.	Mousses.	Total.	Montant Présumé de la Dépense.
ARTICLE 4. Habillement des Equipages à Terre et à la Mer. *A Terre.*				
Petits états-majors des divisions	696	—	696	—
Compagnies de gabiers et de terroniers, &c.	685	—	685	—
„ canonniers	242	—	242	—
„ fusiliers	210	—	210	—
„ mécaniciens	314	—	314	—
„ dépôt	1,493	—	1,493	—
Bataillon d'instruction de fusiliers	520	—	520	—
Total	4,160	—	4,160	—
Habillements des 4,160 officiers, mariniers et marins, calculé à raison de 96 frs. par homme et par an	—	—	—	399,360
Somme égale aux retenues opérées sur la solde (Equipages à Terre, Article 2)	—	—	—	399,360
A Ajouter. Pertes éprouvées par les marins dans les événements de mer et lors de congédiements anticipés (cas prévus par l'Article 241 du Décret du 11 Août, 1865)	—	—	—	20,384
	—	—	—	419,744
A la Mer. Effectif des hommes embarqués (déduction faite des 45 c.)	27,171	1,710	28,881	—
A déduire les surnuméraires (déduction faite des 45 c.)	1,739	—	1,739	—
Reste	25,432	1,710	27,142	—
		fr.		
Habillement des 25,432 officiers, mariniers et marins, à 96 frs. (fixation individuelle par an)	—	2,441,472		—
Idem des 1,710 mousses à 81 frs. (même fixation)	—	138,510		—
Total	—	2,579,982		—
A Ajouter. Fractions négligées dans le calcul des incomplets (1 fr. 45 c. de l'effectif)	—	10		—
Somme égale aux rétenues opérées sur la solde (Equipages à la Mer, Article 5)	—	2,579,992		—
A Ajouter. Délivrances extraordinaires de vêtements aux équipages des bâtiments à vapeur, aux bâtiments destinés pour Terre-Neuve et l'Islande et à ceux qui doivent doubler le cap Horn	—	20,000		2,599,992
Total de l'Article 4	—	—		3,019,736
Et pour somme ronde	—	—		3,019,736

Note.—Crédits demandés pour l'exercice 1865, 3,019,736 frs.
Différences au budget de 1865, alloués pour l'exercice 1864, 3,019,736 frs.

Table V.—*Suite du Chapitre 5. Article 6. Habillement des Troupes.*

Nature des Dépenses.	Effectif.		Prix des Masses.		Dépense.		Montant Présumé de la Dépense.
	Sous-Officiers.	Soldats.	Sous-Officiers.	Soldats.	Sous-Officiers.	Soldats.	
Article 6.—*Habillement des Troupes* (*a*).			fr. c.	fr. c.	fr.	fr.	fr.
Infanterie de marine	1,074	11,293	50 06	42 53	53,764	507,323	—
Régiment d'artillerie	282	2,780	59 65	55 50	16,821	154,290	—
Compagnies d'ouvriers d'artillerie	70	885	59 65	55 50	4,175	49,117	—
Compagnie de discipline	8	203	40 97	33 33	828	6,770	—
Compagnies de gardes-chiourmes	29	338	44 72	38 94	1,297	13,161	—
	—	—	—	—	76,385	730,659	807,044
A Ajouter—					fr.	c.	
Infanterie (pour 2,000 recrues pendant six mois en France représentant la dépense de 1,000 hommes à 42 frs. 55 c.					42,550	00	57,146
Régiment d'artillerie (pour 390 recrues pendant six mois en France, représentant la dépense de 195 hommes à 55 frs. 50 c. l'un)					10,822	50	
Ouvriers d'artillerie (pour 136 recrues pendant six mois en France, représentant la dépense de 68 hommes à 55 frs. 55 c. l'un)					8,774	00	
Total de l'Article 6							864,191
Et pour somme ronde							864,191

Note.—Crédits, demandés pour l'exercice 1865, 864,191 frs.; alloués pour l'exercice 1864, 864,191 frs.

Table VI.—*Suite du Chapitre 5. Article 7. Objets Divers concernant les Troupes.*

		Montant Présumé de la Dépense.
Article 7.—Objets Divers concernant les Troupes (*b*).		
Chauffage.		fr.
Pour 533,995 rations des sous-officiers (365 jours) à 0 fr. 0430 la ration		22,962
„ 67,897 „ collectives de l'ordinaire (365 jours) à 0 fr. 6457 l'une		43,845
„ 11,765 „ „ chauffage des chambres (133 jours d'hiver) à 0 fr. 7718 l'une		9,075
		75,882
A Déduire—		
Pour les troupes passagères et pour les détachements auxquels il n'est pas fait de distribution régulière dans les colonies		14,572
		61,310
A Ajouter— *Entretien des Armes.*		
Infanterie de marine	22,292	28,754
Artillerie „	5,385	
Compagnie de discipline	276	
Compagnies de gardes-chiourmes	800	
Ecoles et Gymnases.		
Ecole d'artillerie de marine (matériel)	8,000	28,000
„ et gymnases régimentaires	20,000	
Frais de Transport et d'Emballage.		
Emballage et transport des effets d'habillement et autres appartenant aux corps de troupes (dépenses effectuées en France)		11,400
Total de l'Article 7		129,465
Et pour somme ronde		129,465

Note.—Crédits demandés pour l'exercice 1865, 129,465 frs.; alloués pour l'exercice 1864, 129,710 frs. Différence en moins, 245 frs.

TABLE VII.—*Suite du Chapitre* 6. *Corps Entretenus et Agents Divers.*

Effectif.	Nature des Dépenses.	Appointements par An.	Supplé-ments.	Total par Grade.	Montant Présumé de la Dépense.
		fr.	fr.	fr.	fr.
	ARTICLE 2.—Génie Maritime.				
	SEC. 1.—*Solde d'Activité.*				
	Inspection Générale.				
2	1 inspecteur général	12,000	1,500	13,500	25,000
	1 directeur des constructions navales de 1re classe adjoint à l'inspection	10,000	1,500	11,500	
	Service des Ports.				
10	4 directeurs des constructions navales de 1re classe	10,000	1,500	11,500	46,000
	6 directeurs des constructions navales de 2e classe	8,000	1,500	9,500	57,000
40	20 ingénieurs de 1re classe....	5,000	1,500	6,500	130,000
	20 „ de 2e classe	4,000	1,500	5,500	110,000
70	28 sous-ingénieurs de 1re classe..................................	3,000	1,200	4,200	117,600
	28 sous-ingénieurs de 2e classe..................................	2,400	1,000	3,400	95,200
	14 sous-ingénieurs de 3e classe..................................	2,000	1,000	3,000	42,000
10	Elèves	1,200	—	1,200	12,000
6	Conducteurs principaux et ordinaires	1,600 @ 2,400	—	—	12,000
10	Commis dessinateurs	1,200 „ 2,000	—	—	15,800
148					662,600
	Ecole d'Application à Paris.				
3	Commis dessinateurs	1,500 @ 2,400	—	—	6,600
2	Professeurs d'Anglais et de dessin	1,200	—	1,200	2,400
153		—	—	—	671,600

Table VIII.—*Suite de Chapitre* 6. *Article* 12. *Officiers de Santé.*

		Appointements par An.	Montant Présumé de la Dépense.	
		fr.	fr.	fr.
	Article 12. *Officiers de Santé, Inspection Générale.*			
1	Inspecteur général	10,000	10,000	10,000
	Service Général.			
3	Directeurs du service de santé	8,000	24,000	
11	Médecins et pharmaciens en chef	5,000	55,000	
16	Médecins et pharmaciens professeurs	3,500	56,000	
30	Médecins principaux	3,500	105,000	
440	100 médecins de 1re classe	2,800	280,000	
	200 „ 2e „	2,000	400,000	
	140 „ 3e „	1,200	168,000	
43	9 pharmaciens de 1re „	2,800	25,200	
	14 „ 2e „	2,000	28,000	
	20 „ 3e „	1,200	24,000	
				1,165,200
	A Ajouter.			1,175,200
—	Frais du service de santé dans les ports secondaires	—	—	3,700
—	Idemnité de logement	—	—	185,000
—	Supplément de résidence à Paris des officiers de santé attachés à l'inspection générale	—	—	3,300
—	Abonnement pour frais de bureau	—	—	2,000
—	Supplément de fonctions aux officiers de santé attachés dans les établissements hors des ports	—	—	1,500
—	Frais d'écrivains pour le secrétariat des conseils de santé à Brest et à Toulon	—	—	1,800
				1,372,500
	A Déduire.			
—	1. Solde et indemnité de logement des officiers de santé attachés au service des divisions des équipages de la flotte, transportée au chapitre 4, article 2, équipages à terre	—	10,320	
—	2. Appointements de grade des officiers de santé embarqués, transportés au chapitre 4, article 3, équipages à la mer	—	436,300	
—	3. Indemnité de logement des mêmes	—	81,880	
				528,500
	A Déduire de Nouveau.			794,000
—	Solde, suppléments et indemnité de logement de l'inspecteur général et du médecin principal attaché à l'inspection, transportés à l'article 7 du chapitre 3	—	—	18,460
544	Reste: Total de l'Article 12	—	—	775,540

Note.—Crédits demandés pour l'exercice 1865, 775,540 frs.
„ alloués „ '64, 775,540 frs.

TABLE IX.—*Chapitre* 8. HÔPITAUX. *Article* 1. *Appointments et Frais Divers.*

Effectif des Agents.		Nature des Dépenses.	Montant Présumé de la Dépense.	Crédits	
Nourris.	Non Nourris.			Demandés pour l'Exercice 1865.	Alloués pour l'Exercice 1864.
			fr.	fr.	fr.
		Chapitre 8.—*Hôpitaux.*			
		ARTICLE 1.			
		Appointements et Frais Divers.			
112	—	Sœurs hospitalières	62,640	—	—
—	3	Jardiniers botanistes entretenus	5,100	—	—
—	27	Jardiniers des jardins botaniques et des jardins potagers	23,360	—	—
209	—	Infirmiers	72,792	—	—
14	39	Gardiens et portiers	28,752	—	—
33	10	Divers agents	23,058	—	—
—	34	Journaliers	20,595	—	—
368	113		236,297	—	—
481					
		A Ajouter.			
		Indemnité d'habillement aux infirmiers (première mise) 5,175	19,789	—	—
		Indemnité d'habillement aux gardiens et portiers 3,284			
		Haute paye aux infirmiers 8,610			
		Suppléments aux vaguemestres 720			
		Gratifications aux infirmiers 2,000			
		Frais de route des sœurs	1,000	—	—
			257,086	257,086	257,086

TABLE X.—*Chapitre 8, Articles 2, 3, 4 et 5.* HOPITAUX, *Vivres, Materiél, Malades, Quarantine.*

Nature des Dépenses.	Montant Présumé de la Dépense.	Crédits.		Différences au Budget de 1865. En Moins.
		Demandés pour l'Exercice 1865.	Alloués pour l'Exercice 1864.	
ARTICLE 2. *Achats Généraux faits en France de denrées, de médicaments et d'objets relatifs au Service des Hôpitaux et des Bâtiments de la Flotte.*	fr.	fr.	fr.	fr.
Vivres	456,112	—	—	—
Chauffage	23,512	—	—	—
Eclairage	11,000	—	—	—
Drogues et médicaments, sangsues, &c.	194,212	—	—	—
Linge à pansement, charpie, &c.	127,470	—	—	—
Instruments de chirurgie, bandages herniaires, &c.	144,400	—	—	—
Renouvellement du mobilier	150,048	—	—	—
	1,106,754	—	—	—
A Ajouter. Nourriture des agents dont { 112 à raison de 300 frs. par an. 33,600; 256 à ration de 180 frs. par an. 46,080 }	79,680	—	—	—
Total de l'Article 2	1,186,434	1,186,434	1,216,199	29,765*
ARTICLE 3. *Dépenses relatives au Matériel.*				
Indemnité d'entretien de caisse allouée aux chirurgiens embarqués	11,580	—	—	—
Entretien du mobilier des hôpitaux	62,503	—	—	—
Droits de douane et d'octroi	39,476	—	—	—
Frais de charroi et diverses dépenses	8,325	—	—	—
Total de l'Article 3	121,884	121,884	121,884	—
ARTICLE 4. *Traitement de Malades hors des Etablissements de la Marine.*				
Hôpitaux civils et militaires de France et d'Algérie	138,339	—	—	—
Colonies et consulats	536,704	—	—	—
Total de l'Article 4	675,043	675,043	675,422	379*
ARTICLE 5. Frais de quarantaine et patentes de santé	—	5,000	5,000	—
Total du Chapitre 8	—	2,245,447	2,275,591	30,144

* Réductions provenant de la non-bissextilité de l'année.

TABLE XI.—*Suite de l'Annexe No. 1. Chapitre 8.* HÔPITAUX.
Calcul des Effectifs.

Calcul des Effectifs.				Hommes.
Effectif total personnel (voir le tableau à la page précédente)				63,598
A Ajouter.				
Divers officiers militaires ou civils et divers agents admissibles aux hôpitaux; ouvriers, invalides de la marine, &c. (approximation)				3,000
A Déduire.				66,598
1. Le personnel—				
Des conseils, inspections générales et contrôle central	15	6,747	14,259	
Des officiers de la marine	2,174			
„ directions d'artillerie en France	317			
„ corps entretenus et agents divers	1,650			
De la maistrance, &c. moins les escouades de gabiers de port et de gardiennage des vaisseaux	2,591			
2. Les troupes servant aux colonies, savoir—				
Infanterie	6,225	7,477		
Artillerie	1,252			
3. Les écoles régimentaires	—	3		
4. Les tribunaux maritimes	—	32		
Reste				52,339
Ce nombre d'après la proportion du vingtième de l'effectif, suppose				2,617 malades

Pour	Calcul de la Dépense.			Dépense.
				fr.
1,792	Hommes à traiter dans les hôpitaux maritimes (654,080 journées à 1 fr. 66 c. l'une, 1,059,638 fr. 27 c.), soit			1,059,638
251	Hommes à traiter dans les hôpitaux militaires et civils de France et d'Algérie (91,615 journées à 1 fr. 51 c. l'une, 138,338 fr. 65 c.), soit	138,339	675,043	
574	Hommes à traiter dans les colonies et consulats, et achats de médicaments (par approximation)	536,704		
2,617				1,734,681
	Personnel			257,086
	Nourriture des agents			79,680
	Dépenses des services étrangers au traitement des malades			169,000
	Frais de quarantaine et patentes de santé			5,000
	Total égal à la dépense du chapitre Hôpitaux			2,245,447

TABLE XII.—*Suite de l'Annexe No. 1. Chapitre 9.* VIVRES. *Calcul des Effectifs et de la Dépense en Rations.*

	Effectif Total du Personnel.	Déduction.	Reste en Rationnaires.	Prix Moyen des Rations.	Dépense en Rations.
				fr.	fr.
Conseils, inspections générales et contrôle central	15	15	—	—	—
Etats-majors de la flotte	1,047	1,047	—	—	—
Directions d'artillerie en France	317	317	—	—	—
Corps entretenus et agents divers	1,221	1,221	—	—	—
Equipages à terre et marins détenus à bord du pénitencier établi à Brest	4,659	327	3,952 380	0·6175 0·4605	890,731 63,871
Bâtiments armés	30,473	—	30,473	0·9723	10,814,544
Infanterie de marine—					
A terre à la ration de pain embarquée à la ration de mer	14,299	6,915	6,884 500	0·2246* 0·9723†	564,341 177,444
Artillerie de marine—					
A terre à la ration de pain embarquée à la ration de mer	4,409	1,537	2,672 200	0·2246* 0·9723†	219,047 70,977
Gendarmerie maritime	382	382	—	—	—
Compagnie de discipline	216	16	200	0·2246	16,395
Agents de surveillance des chiourmes	422	73	349	0·2246	28,608
Maistrance, gardiennage et surveillance	3,306	3,306	—	—	—
Tribunaux maritimes	32	32	—	—	—
Condamnés	2,800	140	2,660	0·4301	417,581
	63,598‡	15,328	48,270	—	13,263,545

A Ajouter.

			fr.
Supplément de pain aux marins auxquels la ration ordinaire ne suffit pas et à ceux naviguant au delà du 50me degré de latitude; consommations extraordinaires dans les régions intertropicales, doubles rations en boissons et diverses dépenses	466,351		599,351
Vin, eau-de-vie et vinaigre délivrés aux équipages à terre, aux troupes et aux ouvriers de la marine pendant les chaleurs, fournitures extraordinaires aux mêmes ainsi qu'aux forçats	133,000		
Fourrages pour 39 chevaux de la compagnie des canonniers conducteurs créée par le décret du 14 Août, 1861 (14,274 rations à 1 fr. 50 c. l'une)			21,411
		Total du chapitre 9	13,884,307
		Et pour somme ronde	13,884,308

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* Prix de la ration à terre. † Prix de la ration de mer.

‡ Voir ci-devant le tableau détaillé de l'effectif du personnel.

Note to TABLE XII.

Eléments de Déductions.		
Individus sans ration	—	15
" "	—	1,047
" "	—	317
" "	—	1,221
Officiers et professeurs	99	327
Vingtième des hôpitaux sur le restant	228	
Individus sans ration	—	—
Officiers	483	6,915
Hommes aux colonies	6,043	
Vingtième des hôpitaux sur le restant	389	
Ecoles régimentaires	3	1,537
Officiers	173	
Hommes aux colonies	1,210	
Vingtième des hôpitaux sur le restant	151	
Individus sans ration	—	382
Officiers	5	16
Vingtième des hôpitaux sur le restant	11	
Sous-officiers entretenus	55	73
Vingtième des hôpitaux sur le restant	18	
Individus sans ration	—	3,306
" "	—	32
Vingtième des hôpitaux	—	140
Total	—	15,328

⁂ There is a discrepancy in two of the totals in Table VIII, viz., those of 794,000 fr. and 775,540 fr.; but reference to the official budget from which these statistics have been compiled, shows that both amounts are in accordance with the original.

TABLE XIII.—*Annexe No.* 1. *Tableau du Personnel, pour servir de*

Désignation des Corps Spéciaux.	Décomposition de l'Effectif.			
	Officiers Militaires (y compris les Aspirants), Officiers Civils (y compris les Commis), Examinateurs, Professeurs, &c.	Officiers, Mariniers et Marins, Agents Divers, Maîtres, Mécaniciens, Conducteurs, &c.	Gardes et Contrôleurs d'Artillerie, Chefs, Sous-Chefs, et Ouvriers d'Etat; Armuriers, Sous-Officiers et Soldats.	Total.
SECTION 1.				
Chapitre 3.—*Conseils, Inspections Générales et Contrôle Central.*				
Inspection du matériel de l'artillerie	8	—	—	8
„ générale des troupes d'infanterie	5	—	—	5
Contrôle central	2	—	—	2
	15	—	—	15
SECTION 2.				
Chapitre 4.—*Etats-Majors et Equipages.*				
Officiers de la marine	2,174	—	—	2,174
Service à terre. Divisions des équipages de la flotte	99	4,160	—	4,259
Service à la mer. Etats-majors et équipages embarqués	1,592	28,881	—	30,473
Détenus du pénitencier flottant	—	400	—	400
	3,865	33,441	—	37,306
Chapitre 5.—*Troupes.*				
Infanterie de marine	483	—	13,816	14,299
Directions d'artillerie	38	—	279	317
Régiment „	176	—	4,233	4,409*
Gendarmerie maritime	17	—	365	382
Compagnie de discipline	5	—	211	216
Sous-officiers et garde-chiourmes (pour mémoire, l'effectif de ce corps est transporté ci-après aux chiourmes)	—	—	—	—
	719	—	18,904	19,623
Chapitre 6.—*Corps Entretenus et Agents divers.*				
Génie maritime	147	6	—	153
Ingénieurs-hydrographes	19	—	—	19
Examinateurs et professeurs d'hydrographie	46	—	—	46
Commissariat de la marine	434	—	—	434
Inspection de la marine	34	—	—	34
Comptables du matériel	97	30	—	127
Personnel administratif des directions de travaux dans les ports et des établissements de la marine hors des ports	72	—	—	72
Agents de manutention des subsistances	11	—	—	11
Ingénieurs des ponts et chaussées	32	45	—	77
Aumôniers de la marine	67	—	—	67
Service de santé	544	—	—	544
Divers services. (Dépôt des cartes et plans de la marine; bibliothécaires, examinateurs de l'école navale; agents comptables des traites de la marine)	26	—	—	26
Mécaniciens en chef et mécaniciens principaux	40	—	—	40
	1,569	81	—	1,650

ses à *l'Établissement des Chapitres* 3, 4, 5, 6, 7, 14, *du Budget de* 1865.

Effectif Général.					Désignation des Corps Spéciaux.
Officiers Militaires (y compris les Aspirants), Officiers Civils (y compris les Commis), Examinateurs, Professeurs, &c.	Officiers et Marins, Agents Divers, Maîtres Mécaniciens, Conducteurs, &c.	Gardes et Contrôleurs d'Artillerie, Chefs, Sous-Chefs, et Ouvriers d'Etat; Armuriers, Sous-Officiers et Soldats.	Condamnés.	Total.	
					SECTION 1. Chapitre 3.—*Conseils, Inspections Générales et Contrôle Central.*
—	—	—	—	—	Inspection du matériel de l'artillerie
—	—	—	—	—	„ générale des troupes d'infanterie
—	—	—	—	—	Contrôle central
15*	—	—	—	15	
					SECTION 2. Chapitre 4.—*Etats-Majors et Equipages.*
—	—	—	—	—	Officiers de la marine
—	—	—	—	—	Service à terre. Divisions des équipages de la flotte
—	—	—	—	—	Service à la mer. Etats-majors et équipages embarqués
—	—	—	—	—	Détenus du pénitencier flottant
3,865	33,441	—	—	37,306	
					Chapitre 5.—*Troupes.*
—	—	—	—	—	Infanterie de marine
—	—	—	—	—	Directions d'artillerie
—	—	—	—	—	Régiment „
—	—	—	—	—	Gendarmerie maritime
—	—	—	—	—	Compagnie de discipline
—	—	—	—	—	Sous-officiers et garde-chiourmes (pour mémoire, l'effectif de ce corps est transporté ci-après aux chiourmes)
719	—	18,904	—	19,623	
					Chapitre 6.—*Corps Entretenus et Agents divers.*
—	—	—	—	—	Génie maritime
—	—	—	—	—	Ingénieurs-hydrographes
—	—	—	—	—	Examinateurs et professeurs d'hydrographie
—	—	—	—	—	Commissariat de la marine
—	—	—	—	—	Inspection de la marine
—	—	—	—	—	Comptables du matériel
—	—	—	—	—	Personnel administraitif des directions de travaux dans les ports et des établissements de la marine hors des ports
—	—	—	—	—	Agents de manutention des subsistances
—	—	—	—	—	Ingénieurs des ponts et chaussées
—	—	—	—	—	Aumôniers de la marine
—	—	—	—	—	Service de santé
—	—	—	—	—	Divers services. (Dépôt des cartes et plans de la marine; bibliothécaires, examinateurs de l'école navale; agents comptables des traites de la marine)
—	—	—	—	—	Mécaniciens en chef et mécaniciens principaux
1,569	81	—	—	1,650	

TABLE XIII.—*Annexe No.* 1.

Désignation des Corps Spéciaux.	Décomposition de l'Effectif.			
	Officiers Militaires (y compris les Aspirants), Officiers Civils (y compris les Commis), Examinateurs, Professeurs, &c.	Officiers, Mariniers et Marins, Agents Divers, Maîtres, Mécaniciens, Conducteurs, &c.	Gardes et Contrôleurs d'Artillerie, Chefs, Sous-Chefs, et Ouvriers d'Etat; Armuriers, Sous-Officiers et Soldats.	Total.
Chapitre 7.—*Maistrance, Gardiennage et Surveillance.*				
Maîtres entretenus des directions des constructions navales, des mouvements et de l'artillerie dans les ports, et des établissements hors des ports	—	262	—	262
Ecoles de maistrance et écoles élémentaires des apprentis	8	—	—	8
Divers agents	—	853	—	853
Escouades de gabiers de port	—	315	—	315
„ de gardiennage des vaisseaux	—	400	—	400
Gardiens de magasins et de bureaux, portiers, rondiers, etc.	—	1,020	—	1,020
Compagnies de pompiers	—	448	—	448
	8	3,298	—	3,306
SECTION 4. Chapitre 14.—*Justice Maritime.*				
Tribunaux maritimes	—	—	—	—
Chiourmes.				
Agents de surveillance des chiourmes	—	—	—	—
Condamnés	—	—	—	—
	—	—	—	—
A Déduire.				
Les états-majors des divisions, des équipages à terre et des bâtiments armés, portés à la fois aux Articles 1, 2 et 3, du Chapitre 4, et aux Articles 5, 11 et 14, du Chapitre 4 (Section 2 du budget)	—	—	—	—
	—	—	—	—

NOTE.—Les personnel de l'administration centrale, le personnel complémentaire des hôpitaux, le présent tableau.

* Effectif. Conseils, inspections génerales et contrôle central, 15; officiers de la marine, 2,174; ce nombre les états-majors des divisions des bâtiments armés, 1,556, ce chiffre des officiers se

Tableau du Personnel, &c.—Contd.

Effectif Général.					Désignation des Corps Spéciaux.
Officiers Militaires (y compris les Aspirants), Officiers Civils (y compris les Commis), Examinateurs, Professeurs, &c.	Officiers et Marins, Agents Divers, Maîtres, Mécaniciens, Conducteurs, &c.	Gardes et Contrôleurs d'Artillerie, Chefs, Sous-Chefs, et Ouvriers d'Etat; Armuriers, Sous-Officiers et Soldats.	Condamnés.	Total.	
					Chapitre 7.—*Maistrance, Gardiennage et Surveillance.*
—	—	—	—	—	Maîtres entretenus des directions des constructions navales, des mouvements et de l'artillerie dans le ports, et des établissements hors des ports
—	—	—	—	—	Écoles de maistrance et écoles élémentaires des apprentis
—	—	—	—	—	Divers agents
—	—	—	—	—	Escouades de gabiers de port
—	—	—	—	—	„ gardiennage des vaisseaux
—	—	—	—	—	Gardiens de magasins et de bureaux, portiers, rondiers, etc.
—	—	—	—	—	Compagnies de pompiers
8	3,298	—	—	3,306	
					SECTION 4. Chapitre 14.—*Justice Maritime.*
32	—	—	—	32	Tribunaux maritimes
					Chiourmes.
—	—	422	—	422	Agents de surveillance des chiourmes
—	—	—	2,800	2,800	Condamnés
6,208	36,820	19,326	2,800	65,754	
					A Déduire.
1,556	—	—	—	1,556	Les états-majors des divisions, des équipages à terre et des bâtiments armés, portés à la fois aux Articles 1 2 et 3, du Chapitre 4, et aux Articles 5, 11 et 14, du Chapitre 6 (Section 2 au budget)
4,652	36,820	19,326	2,800	63,598	

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celui des vivres, les ouvriers des ports et établissements de l'intérieur, ne sont pas compris dans

directions d'artillerie, 317; corps entretenus et agents divers, 1,165; total 4,156. Si l'on déduit de
trouve réduit à 2,600.

On the Municipal Expenditure *of the* Borough *of* Birmingham.

By Thomas Avery, Esq.

[Read before Section F, British Association, Birmingham, September, 1865.]

The intention of this paper is to submit a brief history of the municipal expenditure of Birmingham, with the view of comparing the progress of the town in wealth and population with its increase in taxation, expenditure, and the amount of its public debt.

The examination of this subject will necessarily involve the attentive consideration of many uninviting details, but the student of statistics can never be more usefully employed than in ascertaining the amount, proportion, and distribution of taxation, and its influence upon the general welfare.

As the English are emphatically a self-governing community, not only in imperial legislation but in parochial, county, and municipal affairs, there is therefore the greater need that accurate knowledge and sound views, on the subject of taxation, should be diffused through all the governing classes, and I am anxious to contribute my share of effort in endeavouring to do this for Birmingham.

Previously to the incorporation of the borough the town was governed by commissioners, under different Acts of Parliament, the last of which was obtained in the 9th year of the reign of King George IV, and was entitled "An Act for better paving, lighting, watching, cleansing and otherwise improving the town of Birmingham, in the county of Warwick, and for regulating the police and markets of the said town."

The commissioners, by an Act of Parliament framed in the year 1851, transferred to their successors a public debt of about 112,250*l.*, and an equivalent in valuable property described in the following schedule:—

	Cost. £
Part of Public Office	12,700
,, Smithfield Market	11,500
The Horse Shoe, St. Martin's Lane	5,200
St. Martin's Meat Market	3,500
Market Hall	73,266
,, rights and tolls	12,500
Town Hall	69,521
Wharf in Shadwell Street	2,500
Property, High Street and New Meeting Street	2,754
Wharf in Lancaster Street	1,250
Property in Park Street	1,600
	196,291

Therefore, for a public debt of about 112,250*l.*, the old commissioners transferred to the present municipal corporation property of the value of about 196,291*l.*, besides having accomplished various important street improvements, among which may be noted the purchase and removal of the gateway and the two houses at the east end of New Street, one of which was long occupied by our quaint and pleasant historian Hutton, at a yearly rental of 8*l.* He informs us that he removed there in the year 1750, from No. 6, Bull Street, the lesser part of which shop he occupied as a bookseller, for a weekly payment of 1*s.*

The commissioners also purchased and removed an ancient hostelry, the Wheat Sheaf Inn, which, with numerous shops, obstructed and disfigured the Bull Ring, and also other tenements clustering round the walls of St. Martin's church; besides completing several miles of sewers, forming the commencement of the present system of drainage.

It was a constant subject of reproach to the commissioners that they were a self-elected body, but though it is true that their election was based upon this objectionable principle, it is nevertheless also true that they appear to have discharged their difficult and important functions with wisdom, success, and sagacity; and, as a member of the present corporation, which conducts public affairs upon a scale of far greater magnitude, and possesses much more extensive powers than its predecessors, it is with peculiar pleasure that I submit this cursory notice of their proceedings.

A table is annexed of the financial results of the concluding five years of the separate government of the commissioners, from 1835 to 1839. In all of the following calculations it has been found convenient to give the population of the present limits of the *borough*, as nearly as it could be ascertained, but the table of the expenditure of the commissioners has been formed upon the population of the *parish*.

The population of the decennial periods has been taken in both cases from the census tables, and that of the intermediate years has been ascertained by a percentage thereon.

TABLE A.

	Population.	Yearly Payments.	Amount per Head.
		£	*s.* *d.*
1835...........	159,802	26,847	4 5
'36...........	163,366	27,240	4 4
'37...........	166,966	33,209	5 3
'38...........	170,704	30,216	4 8
'39...........	174,493	31,154	4 9
1840...........	178,456	35,140	5 1
'41...........	182,922	36,939	5 3
'42...........	187,435	40,660	5 6
'43...........	192,102	53,849	6 7
'44...........	196,844	78,775	9 3

During the next ten years the population and expenditure increased as in—

TABLE B.

	Population.	Yearly Payments.	Amount per Head.	
		£	*s.*	*d.*
1845............	201,789	58,445	7	6
'46............	206,827	67,697	7	7
'47............	211,991	83,987	9	2
'48............	217,284	70,363	7	6
'49............	222,709	70,610	7	6
1850............	228,259	98,836	9	10
'51............	232,841	101,717	9	9
'52............	238,615	104,527	8	9
'53............	244,574	123,379	10	2
'54............	250,683	131,723	10	6

Continuing these calculations for the ensuing ten years, there is the same large increase in the numbers of the population, but accompanied by a disproportionate augmentation of the public expenditure.

TABLE C.

	Population.	Yearly Payments.	Amount per Head.	
		£	*s.*	*d.*
1855............	256,943	135,283	10	6
'56............	263,363	123,814	9	5
'57............	268,695	142,909	10	7
'58............	275,406	137,644	10	–
'59............	282,288	135,053	9	7
1860............	289,340	145,310	10	–
'61............	296,076	104,183	7	2
'62............	303,777	155,644	10	3
'63............	310,966	157,996	10	2
'64............	318,732	172,211	10	10

Taking the average population and amount of expenditure, we have the following results for three decennial periods :—

TABLE D.

	Average Amount of Taxation per Head.	
	s.	*d.*
1835–44..	5	6
'45–54..	8	10
'55–64..	9	10

Though the population had increased from 159,802 in 1835 to 318,732 in 1864, the increase in the cost of local government, in the same period, had been so much out of proportion thereto, that whilst it was 4*s*. 5*d*. per head in 1835, it had become 10*s*. 10*d*. per head in 1864. Surely this grave fact eminently deserves the most anxious consideration of the members of the council of this borough, and of all who wish well to municipal institutions. For many years this town has enjoyed a remarkable measure of almost uninterrupted prosperity, which has enabled the burgesses to support this heavy taxation with comparative ease; but should we again be visited with bad times, it is to be feared that it would be felt as a grievous calamity. It is, however, satisfactory to observe, that for the last several years the taxation per head has been nearly stationary, and it may be hoped that it will now begin to diminish.

To give a correct view of the magnitude and variety of the subjects comprehended within the jurisdiction of the corporation, statements are appended of the income and expenditure for the year 1864, from which it will be perceived that several expensive items are included in the present municipal government, such as public baths and parks, free libraries, and a borough cemetery which did not come within the scope either of the proceedings or the powers of the commissioners. (See Appendix, pp. 88–91.)

TABLE E.—*Giving the Amount of the Net Unpaid Balances of the Public Debt and the Annual Charges thereon.*

	Debt.	Annual Interest and Repayment of Principal.
	£	£
1852	297,950	17,886
'53	353,975	18,786
'54	366,095	21,698
'55	436,656	25,941
'56	436,678	27,945
'57	448,292	28,511
'58	437,286	30,611
'59	467,002	33,707
1860	489,027	34,107
'61	526,841	28,143
'62	581,269	43,072
'63	597,014	45,793
'64	638,303	49,192

From this statement it will appear that the increase has been as follows:—

Table F.

	1852.	1864.	Increase.	Percentage Increase.
Population	238,615	318,732	80,117	34
	£	£	£	
Rateable value	679,750	981,500	301,750	45
Income (Table K)	2,080,817	3,199,298	1,118,481	54
Debt	297,950	638,303	340,353	114
Interest and repayments on account of debt	17,886	49,192	31,306	175

In a former table the amount of the debt was stated, and a schedule given of the property transferred by the commissioners to the corporation, and another schedule is here added of the property now in the possession of the corporation, with its approximate value, and also of the important public works and improvements executed by that body:—

	Cost. £
Sewerage works	170,000
Borough Gaol	79,800
Lunatic Asylum	100,000
Baths and Washhouses	46,527
Police Stations	11,793
Part of Public Offices	13,657
Aston Park	19,241
Part of Smithfield Market	20,000
Adderley Park, the gift of C. B. Adderley, Esq., say	10,000
Public Libraries	8,556
Borough Cemetery	41,265
Park Street	2,000
Ann Street and Congreve Street	39,162
Bell Street	6,450
Smallbrook Street	4,500
Temple Row	1,466
Granville Street	4,260
Heath Mill Lane	7,976
Great Barr Street	1,957
Charles Henry Street	307
Smithfield Street	13,106
Tonk Street	8,159
Pershore Street	3,452
* Worcester Street and New Street	29,050
Permanent works, including paving, flagging and sewers outlet	55,139
	697,823
Property received from commissioners (see p. 78)	196,291
	894,114

* Surplus land not yet sold.

In further confirmation and illustration of the increased and increasing pressure of the public debt, and the large proportion of the general revenue which it is gradually absorbing, the following table is submitted. As a convenient and easily understood arrangement, the receipts of the improvement rate only are furnished, that being the chief and most legitimate source of income; but the payments on account of the debt comprehend the whole of the charges thereon, that is to say, those of the municipal and street improvement rates are also included, and the same principle is observed throughout the calculation.

TABLE G.

	Receipts from Improvement Rate.	Charges on Account of Debt.	Income from the Two Shilling Improvement Rate.	Proportion of the Two Shilling Improvement Rate absorbed by Charges on Account of Debt.	Proportion of the Two Shilling Improvement Rate available as General Income.
	£	£	£	s. d.	s. d.
1852........	54,849	17,886	36,963	– 8	1 4
'53........	54,501	18,786	35,715	– 8	1 4
'54........	60,944	21,698	39,246	– 8	1 4
'55........	67,272	25,941	41,331	– 9	1 3
'56........	67,220	27,945	39,275	– 10	1 2
'57........	75,353	28,511	46,842	– 9	1 3
'58........	79,260	30,611	48,649	– 9	1 3
'59........	78,610	33,707	44,903	– 10	1 2
1860........	82,547	34,107	48,440	– 10	1 2
'61........	55,783	28,143	27,640	1 –	1 –
'62........	83,561	43,072	40,489	1 –	1 –
'63........	87,607	45,793	41,814	1 –	1 –
'64........	89,638	49,142	40,446	1 1	– 11

As a collateral branch of this subject, it may not be inappropriate to furnish a table of the amounts levied by the overseers of the poor, and also of the proportion of them absorbed by the borough rate for municipal purposes, and which is entirely under the control of the corporation. It is much to be desired that this singular anomaly should be speedily abolished, that the corporation should be authorised to collect the whole of its own rates, and that the entire system of municipal taxation should be simplified and consolidated.

Table H.

	Total Amount of Poor Rate Collected.	Proportion Paid to Corporation for Borough Rate.	Proportion Available for Relieving the Poor.	Per Head.
	£	£	£	*s.* *d.*
1849............	70,073	26,690	43,383	5 2
1850............	70,503	38,757	31,746	3 8
'51............	73,193	39,572	33,621	3 10
'52............	58,095	35,615	22,480	2 6
'53............	51,298	30,218	21,080	2 4
'54............	88,860	34,247	54,613	5 11
'55............	72,971	22,521	50,450	5 4
'56............	88,956	39,072	49,884	5 2
'57............	88,303	37,914	50,389	5 1
'58............	91,078	43,584	47,494	4 9
'59............	81,479	35,505	45,974	4 6
1860............	71,123	30,881	40,242	3 11
'61............	85,986	36,443	49,543	4 8
'62............	125,688	39,868	85,820	7 11
'63	103,820	46,376	57,444	5 2
'64............	118,712	47,139	71,573	6 4

Table J.—*Showing the Rateable Value of the Property of the Borough, from* 1855 *to* 1864.

	Rateable Value.
	£
1855	739,750
'56	762,510
'57	841,330
'58	853,340
'59	864,490
1860	880,980
'61	899,230
'62	927,730
'63	959,590
'64	981,500

The annexed Table K describes the amounts assessed to property and income tax, and will probably excite considerable interest, as affording information of the progress of the town in wealth and prosperity:—

	Population.	Amount of Assessment of Property and Income Tax.	Per Head.		
		£	£	*s.*	*d.*
1850	228,259	1,814,508	7	19	–
'51	232,841	1,904,826	8	3	7
'52	238,615	2,080,817	8	14	5
'53	244,574	2,170,722	8	17	6
'54	250,683	2,409,549	9	8	11
'55	256,943	2,459,137	9	11	5
'56	263,363	2,396,452	9	2	–
'57	268,695	2,568,607	9	11	2
'58	275,406	2,614,951	9	9	11
'59	282,288	2,662,221	9	8	7
1860	289,340	2,692,572	9	6	2
'61	296,076	2,923,829	10	1	3
'62	303,377	3,006,445	9	18	2
'63	310,966	3,049,580	9	16	1
'64	318,732	3,199,298	10	–	9

The amount of national taxation does not necessarily form any part of this inquiry, but it may nevertheless be instructive to notice it, and the following tables are therefore subjoined, which have been taken from a valuable article contributed by Professor Leone Levi to the *Journal of the Statistical Society.**

TABLE L.—*United Kingdom, Population and Taxes,* 1801 *to* 1858.

	Population.	Taxes.	Per Head.		
		£	£	*s.*	*d.*
1801–10	17,000,000	57,000,000	3	7	1
'11–20	20,000,000	74,000,000	3	14	0
'21–30	22,500,000	58,000,000	2	11	6
'31–40	25,500,000	51,000,000	2	0	9
'41–50	27,000,000	55,000,000	2	0	8
'50–58	28,000,000	60,000,000	2	2	1

TABLE M.—*Population and Wealth.*

	Population.	Wealth.	Per Head.
		£	£
1801	16,000,000	1,800,000,000	112
'11	18,000,000	2,100,000,000	116
'41	27,000,000	4,000,000,000	150
'58	29,000,000	6,000,000,000	206

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* Vol. xxiii, pp. 37, *et seq.* The sums entered in Table M as "Wealth," and in Table N as "Income," are only estimates.—ED. *S. J.*

TABLE N.—*United Kingdom Population and Income.*

	Population.	Income.	Per Head.	
		£	£	s.
1800…………	16,000,000	230,000,000	14	7
'41…………	27,000,000	450,000,000	16	15
'58…………	29,000,000	600,000,000	20	15

In examining the figures of the three latter tables, we discern one of the chief causes of the public tranquillity and contentment which now so happily prevail. Associated with this marvellous development of national wealth there is a diminished taxation, in other words, there is less to pay and more to pay it with; so that the burthen of it is therefore easily supportable, as compared with the pressure of former years, and it is much to be desired that the same results should be sought and achieved by our local municipal government.

It has been seen that the expenses of the corporation for 1864 were 10*s.* 10*d.* per head, and as in addition thereto the cost of relieving the poor in the same year was 6*s.* 4*d.*, it follows that we have altogether the very serious expenditure of 17*s.* 2*d.* per head. The introduction of railways and of steam navigation, and the removal of some of the restrictions upon trade, are bringing us more and more into competition with the cheap labour and lightly taxed population of other countries; so that an economical administration of the public affairs of the town, or the absence of it, may therefore exercise an important influence upon the permanent welfare of this busy and industrious community.

In bringing this paper to a close, an attentive consideration of the subject appears to lead to the following conclusions:—

1. That the progress of the town in wealth and population has been enormous, but that the amount of taxation and of municipal expenditure has increased in still greater proportions.

2. That the public debt, especially, appears to have excessively increased, owing to the rapidity with which public works and various improvements have been executed, thereby imposing heavy burdens upon the present generation of ratepayers.

3. That it would have been desirable to have omitted some of the least important of these undertakings, and to have extended the others over a longer period of time, and that for the future they should either be suspended altogether, or proceeded with more slowly and deliberately.

4. That this increased taxation does not appear to have materially

interrupted the progress and prosperity of the town; but in the event of any continued depression of trade, it would be almost insupportable by large numbers of the ratepayers, and that therefore the utmost vigilance and caution should be constantly exercised to control and diminish its amount.

APPENDIX.

I.—Municipal Accounts, Birmingham. *General Statement of Income*

Income.	—		Received.		Accrued but not Received.		Total Income.	
	£	s.	£	s.	£	s.	£	s.
Borough rate, viz.—								
Birmingham overseers	46,757	18						
Less transfers to free libraries	1,386	9						
			44,279	17	1,091	13	45,371	10
Aston overseers	11,586	11						
Less transfers to free libraries	342	7						
			9,545	10	1,698	13	11,244	4
Edgbaston overseers	5,791	8						
Less transfers to free libraries	188	5						
			5,603	3	—		5,603	3
			59,428	11	2,790	7	62,218	17
Third instalment of borough rate, amounting to 63,091*l.* 12*s.*, made 17th March, 1863, payable 15th October, 1863	15,772	18	—		—		—	
Fourth instalment, payable 15th January, 1864	15,772	18	—		—		—	
First instalment of borough rate, amounting to 65,180*l.* 4*s.* 8*d.*, made 15th March, 1864, payable 15th April, 1864	16,295	1	—		—		—	
Second instalment, payable 15th July, 1864	16,295	1	—		—		—	
	64,135	18						
Less transfers to free libraries	1,917	1	—		—		—	
	62,218	17						
Her Majesty's Treasury—								
Prosecutions of assizes and sessions	—		—		2,947	8	2,947	8
Removal of transports	—		—		92	17	92	17
Maintenance of prisoners	—		1,602	17	1,425	18	3,028	16
Police pay and clothing	—		5,508	3	—		5,508	3
Borough Gaol	—		1,490	10	—		1,490	10
Kent Street Baths and Washhouses	—		1,442	1	65	15	1,507	16
Woodcock Street Baths	—		629	1	28	17	657	18
Northwood "	—		1,097	11	57	14	1,155	5
Calthorpe Park	—		24	10	8	15	33	5
Adderley "	—		21	–	5	5	26	5
Rents	—		368	3	26	16	394	19
Fines	—		–	1	—		–	1
Penalties on summary convictions	—		652	9	—		652	9
Magistrates' clerks' fees	—		2,442	5	69	12	2,511	17
Weights and measures	—		277	9	24	12	302	1
Gas meters	—		185	2	14	10	199	13
Burgess lists	—		2	15	1	19	4	14
Constables' services	—		248	13	64	7	312	19
Prison beds	—		5	2	—		5	2
Old stores sold	—		16	2	3	7	19	9
Miscellaneous	—		28	7	4	4	32	11
	—		75,470	12	7,632	8	83,102	15

APPENDIX.

and Expenditure from 1*st September*, 1863, *to* 1*st September*, 1864.

Expenditure.	Paid.		Incurred but not Paid.		Total Expenditure.	
	£	s.	£	s.	£	s.
Police salaries	580	–	—		580	–
„ wages	20,113	14	—		20,113	14
„ medical aid	128	16	—		128	16
„ gratuities	21	15	—		21	15
„ contingencies	419	14	87	8	507	2
„ clothing	1,546	2	474	14	2,020	16
„ lanterns	205	8	37	16	243	4
Rent of offices and stations	164	5	—		164	5
Rents, taxes, and insurance	96	13	—		96	13
Income tax on loans' interest	305	5	—		305	5
Coal, gas and water	374	12	39	–	413	12
Printing, stationery, and advertising	888	6	—		888	7
Repairs, furniture, and fittings	413	3	22	18	436	1
Burgess lists	104	7	49	19	154	5
Bankers' charges (less interest)	301	1	—		301	1
Coroners' inquests	1,627	13	—		1,627	13
Prosecutions at assizes and sessions	2,499	6	—		2,499	6
Second court of quarter sessions	105	–	—		105	–
Clerk of the peace fees	46	1	241	9	287	10
County of Warwick	2,238	2	—		2,238	2
Compensation annuities	370	14	—		370	14
Borough lunatic patients	238	15	—		238	15
Salaries	3,924	14	—		3,924	14
Magistrates' clerks' salaries	2,100	–	—		2,100	–
Municipal elections	94	3	—		94	3
Law and professional charges	39	13	—		39	13
Incidental and petty expenses	87	7	—		87	7
Weights and measures	671	13	—		671	13
Gas meters	219	1	—		219	1
Prison, Moor Street	35	17	8	16	44	13
Calthorpe Park	92	19	2	16	95	14
Adderley „	97	15	—		97	15
Aston „	—		182	1	182	1
Borough Gaol	9,096	6	1,185	8	10,281	14
Kent Street Baths and Washhouses	1,352	16	187	16	1,540	12
Woodcock Street Baths	902	8	58	9	960	17
Northwood „	796	10	66	9	856	19
Gaol—loans repayment	2,900	–	—		2,900	–
„ interest on loans	1,430	–	—		1,430	1
Asylum—loans repayment	3,600	–	—		3,600	–
„ interest on loans	2,385	9	—		2,385	9
Baths—loans repayment	833	7	—		833	7
„ interest on loans	1,535	–	—		1,535	–
Police stations	504	6	—		504	6
Public office	431	8	—		431	8
General improvement	1,529	18	—		1,529	18
Borough cemetery	1,676	10	—		1,676	10
	69,119	12	2,644	18	71,764	11
Provision for the repayment of municipal loans	—		4,089	1		
„ „ cemetery „	—		1,333	6	5,422	8
					77,186	19
Disallowances by Her Majesty's Treasury on account of prosecutions at sessions from June, 1862, to June, 1863	—		—		322	8
					77,509	7
Balance, income over and above expenditure	—		—		5,593	8
	—		—		83,102	15

II.—BOROUGH IMPROVEMENT ACCOUNT, BIRMINGHAM. *General Statement*

Income.	Received.		Accrued but not Received.		Total Income.	
	£	s.	£	s.	£	s.
Borough improvement rate, 1860	–	16	—		–	16
" " '62	135	10	—		135	10
" " '63	22,095	6	1,304	14	23,400	–
" " '64, being two-thirds of estimate 72,525*l.*	43,898	–	4,452	–	48,350	–
Town hall	117	6	—		117	6
Rents	108	9	43	18	152	8
Interest, bankers	771	18	—		771	18
General Market	5,115	13	103	12	5,219	5
Vault rents	667	19	26	12	694	11
Smithfield Market	2,144	6	42	19	2,187	5
St. Martin's "	284	18	5	12	290	11
Machine	208	11	3	–	211	11
Pound fines	44	17	2	13	47	11
Night soil and manure	3,362	12	974	19	4,337	10
Stock and old stores sold	20	1	—		20	–
Repayment of improvement expenses	2,272	–	347	18	2,619	18
Bordesley Wharf	35	19	2	11	38	9
Hackney carriage licenses	159	12	—		159	12
Slaughter houses licenses and receipts	27	16	—		27	16
Penalties on summary convictions	137	4	—		137	4
Miscellaneous	4	15	—		4	15
Dividends on sinking fund investment	714	18	—		714	18
	82,328	6	7,810	8	89,638	14
Balance expenditure over and above income	—		—		5,808	2
	—		—		95,446	16

III.—STREET IMPROVEMENT ACCOUNT, BIRMINGHAM. *General Statement*

Income.	Received.		Accrued but not Received.		Total Income.	
	£	s.	£	s.	£	s.
Street improvement rate, 1860	4	18	—		4	18
" " '63	1,791	11	133	9	1,925	–
" " '64, being two-thirds of estimate, 8,955*l.*	4,342	–	628	–	5,970	–
Rents	424	12	39	1	463	14
Interest, bankers	524	12	—		524	12
Dividends on sinking fund investments	416	1	—		416	1
	8,503	14	800	10	9,304	5

of Income and Expenditure from 1*st September*, 1863, *to* 1*st September*, 1864.

Expenditure.	Paid.		Incurred but not Paid.		Total Expenditure.	
	£	s.	£	s.	£	s.
Interest on loans	9,263	5	—		9,263	5
„ commissioners' bonds	5,162	6	—		5,162	6
Annuities	419	8	—		419	8
Income tax on loans, interest, &c.	449	13	—		449	13
Salaries	1,148	17	—		1,148	17
Collecting rates	1,440	1	87	9	1,527	11
Appeals against rating	43	11	—		43	10
Law and professional charges	2,126	11	5,051	5	7,177	16
Rent, rates, coal and gas	1,230	10	—		1,230	10
Repairs, furniture and fittings	181	8	—		181	8
Printing, stationery and advertising	526	-	—		526	-
Town hall	228	10	350	-	578	10
Incidental and petty expenses	50	14	—		50	14
Pensions and gratuities	29	6	—		29	6
General Market	1,747	7	332	18	2,080	5
Smithfield „	796	7	137	6	933	13
St. Martin's „	226	9	—		226	9
Machine	69	15	—		69	15
Repairing streets and roads	23,697	11	2,776	19	26,474	10
Cleansing streets	7,146	15	—		7,146	15
Water supply	203	2	14	14	217	16
Watering streets	2,288	17	115	-	2,403	17
Public lamps	411	8	10,818	10	11,229	18
Outlay and repairs on stock	1,608	14	83	4	1,691	18
Removing night soil	9,989	4	216	19	10,206	3
Bordesley Wharf	46	1	—		46	2
Removing nuisances	924	1	22	2	946	3
Hackney carriages	24	1	—		24	1
Slaughter houses	8	-	—		8	.
	71,487	12	20,006	6	91,493	19
Sinking fund for repayment of loans and bonds	—		—		3,238	-
Dividends on ditto	—		—		714	17
	—		—		95,446	16

f Income and Expenditure from 1*st September*, 1863, *to* 1*st September*, 1864.

Expenditure.	Paid.		Incurred but not Paid.		Total Expenditure.	
	£	s.	£	s.	£	s.
Interest on loans and purchase monies	5,095	13	16	5	5,111	19
Income tax on loans' interest	152	3	—		152	3
Ground rent, rates, taxes, &c.	141	3	—		141	3
Collecting rates	330	14	34	15	365	9
Law and professional charges	32	18	—		32	18
	5,752	11	51	-	5,803	12
Instalment of loan repaid	—		—		800	-
Sinking fund for repayment of loans	—		—		1,900	-
Dividends on ditto	—		—		416	1
					8,919	13
Balance, income over and above expenditure	—		—		384	12
	—		—		9,304	5

On the VITAL STATISTICS *of* BIRMINGHAM *and* SEVEN *other* LARGE TOWNS. *By* WILLIAM LUCAS SARGANT, *Author of "Social Innovators," the "Science of Social Opulence," &c.*

[Read before Section F, British Association, at Birmingham, September, 1865.]

Introduction.

I PROPOSE in this paper to give a short account of the vital statistics of Birmingham. The tables in the appendix contain, 1st, the *population* since 1801, with the *absolute* increase and the *rate* of increase in each decennial period; 2ndly, the numbers living at the date of the last census, at *different ages;* 3rdly, the *density* of population, the *death-rates* and the *birth-rate;* 4thly, the death-rates at *different ages;* 5thly, the *excess* of such death-rates over those of the whole country; 6thly, the numbers who die from phthisis, cholera, and other diseases; 7thly, the proportion of deaths from *each* cause to deaths from *all* causes.

But since an array of figures, without any standard of comparison, is of little value, I have added the same statistics for seven other great towns, as well as for England and Wales. I have selected Wolverhampton and Sheffield as hardware towns; Manchester and Leeds as textile towns; Liverpool as a great seaport; London as the metropolis; and Bristol as having many of the characteristics of London.

That part of my paper which relates to the causes of death, would have been impossible, without the use of a recent report of the Registrar-General. That volume, which is entitled "Supplement to "the Twenty-fifth Report," supplies for each district during the ten years 1851-60, the *percentages* of deaths at different ages and from different causes. We had the *absolute* numbers before; we now have the *rates:* an addition which will be appreciated by all who have busied themselves with this topic. Anyone may now ascertain with ease and certainty the registered mortality of any district, for all ages and for each age; and by running his eye down the columns, may pick out the healthy and unhealthy districts, so far as the register can determine the facts. He may also with the same facility find the causes of death in each district, and for each age.

Population.

As regards the population of the great towns, I need scarcely say that we have no exact information before 1801. I have met with some scattered notices however, in "Eden on the Poor," and in Dr. Price.

I find that in 1752, Norwich had more inhabitants than any of our now greatest towns. It had 36,000 souls; whereas twenty years later, Manchester, including Salford, had only 27,000, Birmingham had little over 30,000, and Liverpool had less than 35,000. It appears that in less than a century, Liverpool, Manchester (with Salford) and Birmingham taken together have grown from 92,000 to a million and a quarter, an increase of thirteen to one.

The number of houses chargeable to the window and house tax in 1781, were in Liverpool, 3,974; Bristol, 3,947; Manchester, 2,519; Norwich, 2,302; Birmingham, 2,291; Newcastle-on-Tyne, 2,219; Sheffield, 2,092.

Table O.—The increase during the present century will be found in my Table O. Some persons have held the paradoxical opinion, that our great wars with Napoleon immediately increased our wealth and population. It is quite true that simultaneously with those wars, there was a sudden advance in the prosperity of England; but this, I imagine, was caused by the rapid progress of manufacturing industry, which was retarded but not stopped by the drain of the war. The table before me shows that population increased much faster after the peace than before it.

The highest rate of increase for all England was that between 1811 and 1821: but in the great towns of my table, the highest rate was that between 1821 and 1831, viz. 40 per cent. The increase in Birmingham was 41 per cent., while that of Liverpool, Leeds, and Manchester was still higher.

The lowest rate of increase for all England was that between 1851 and 1861: the lowest rate in the great towns was in the same period; having been only 20 per cent., or half that of 1821-31. Birmingham increased 27 per cent., Sheffield 37 per cent., but Manchester only 13 per cent., and Liverpool 18 per cent. Remembering that free trade was producing its full effects during the whole of the decade, the results are not what we might have expected. Some allowance however, has to be made for the fact that the limits of the towns remain unchanged, and that therefore an overflow has taken place into the surrounding country.

The rates of increase in Birmingham in each period were 17 per cent., 1801-11; 23 per cent., 1811-21; 41 per cent., 1821-31; 27 per cent., 1831-41; 27 per cent., 1841-51; 27 per cent., 1851-61. The three last decades had the same *rates* of increase, but the absolute increase was about 40,000, 50,000 and 63,000.

Comparing 1801 and 1861, Liverpool was 5½ times as great; Wolverhampton 5; Manchester 4½; Birmingham, Sheffield, and

Leeds 4; Bristol 2½; while London was nearly 3 times as great in 1861 as in 1801.

Ages of the Population.

My Table P gives the ages of the people. These vary a good deal in the different places, though not so much as some would anticipate. First, as to children under 5 years old. In the three hardware towns, these bear a higher proportion to the whole population than they do in all England. They stand highest in Wolverhampton and next in Sheffield. As to the last the fact is accounted for by the prosperity of Sheffield from 1851-61, which caused an increase of 37 per cent., which must have been supplied by a large immigration of young and marriageable people.

Borough and Registration Districts.

The case of Wolverhampton gives me the opportunity of pointing out an important distinction.

My first Table, O, is compiled from the census, where the natural limits of the towns are taken; and Birmingham, for example, includes not only the parish, but also Edgbaston, and the part of Aston which is within the borough. My other tables are compiled from the Registrar-General's Reports, where the limits adopted are those of the Poor Law Board. In the large towns generally, these limits are much narrower than those of the census: this is especially the case as to Birmingham, Sheffield, Manchester, Leeds, and Liverpool: and as it is the suburbs which are cut off (the places of residence of the wealthier classes), the effect is to exaggerate the rates of mortality.

The case of Wolverhampton is the reverse of this. In 1861 the population of the borough was 61,000; the population of the registration district was 127,000. The death-rate therefore, is that of Wolverhampton borough plus a large circuit around it.

Bristol.

Bristol varies in the opposite direction to Wolverhampton. The registration district in 1861 contained less than half the population of the borough. It did not include the town population of St. Philip and Jacob amounting to 31,000, nor the suburban population of Clifton. From recent returns we know that while the death-rate of the registration district of Bristol was nearly $\frac{27}{1000}$, that of the borough was only $\frac{23}{1000}$ (about the same as that of London).

Migration.

This Table P enables us to trace the course of migration of the people, which, as we know, takes place from the country into the towns. In the earlier periods of life, the proportion of the sexes is not disturbed by it. Under 5 years old, for example, the greatest variation is from an *excess* of 2 per cent. of boys in Liverpool, to a *deficiency* of 2 per cent. in Bristol. From 5 to 10 years old the limits of variation are about the same. But at 10 to 15 years old the variation is greater; being from an excess in Liverpool of 5 per cent. of boys, to a deficiency in Leeds of 6 per cent. At 15 to 20 the variation again enlarges; being from an excess of 15 per cent. of females in Bristol, to a deficiency of 5 per cent. in Wolverhampton. The variation reaches its maximum at 20 to 25 years old; being from 24 per cent. excess of females in Bristol, to 2 per cent. deficiency in Sheffield. In the textile towns, Manchester and Leeds, there is a large excess of females from 15 upwards, the largest excess being that in Manchester, from 20 to 25 years old.

In Birmingham (parish), the proportion of the sexes at *each* age is nearly that of England and Wales; as might be expected in a town where the excess of females of *all* ages is rather less than that of England and Wales. Of the two other hardware towns, Sheffield has more males than females; and Wolverhampton has the same but even in a higher proportion.

Female Servants.

The vital statistics of some districts are much disturbed by the number of female servants kept. A popular periodical lately pointed out that in Bath one-fourth of all the women were in service; that in St. George's Hanover Square, taking men and women together, three out of five were in service; while in Bethnal Green, only 5 or 6 per cent. of the women were in service. Now female servants to a great extent come into towns from the country; only the healthy ones come; when they fall ill, they often return to the country to die. They swell the census, but many of their deaths fail to appear in the register of mortality.

My Table P enables me to trace the course of the immigration. I will compare London with the whole country. I find that London has a female excess at all ages of 13 per cent. against 5 per cent. for England. From birth to 15 years of age, the difference between London and England is small. From 15 to 20 years of age, there is in England an excess of females of 2 per cent.: in London there is an excess of 14 per cent. From 20 to 25 years of age, there is in England an excess of females of 12 per cent.: in London there is an excess of 20 per cent. At the higher ages, this variation between England and London gradually diminishes, though at every age up to 85 London has a greater excess of females than England has. These figures confirm the statement that there is a large immigration into London of girls, many of whom return to the country in later life.

If we turn to the tables of mortality we find a confirmation of the opinion that many of these young women leave London to die. The recorded female death-rate of London under 10 years of age is higher than that of England: from 10 to 15 it is lower: for the ten years from 15 to 25 it is decidedly lower: for the ten years from 25 to 35 it is lower: after 35 it is higher again. That is, the registered deaths in London sink very much at those ages at which it is believed that domestic servants retire into the country to die.

On these grounds I maintain that the mortality of the male population is the safer test of the healthiness of a district.

Ages at Death.

My Table R gives the ages at which the deaths in the different towns take place. As to the country at large, the figures must modify an opinion commonly held as to the proportion of male and female mortality. It is well known that there are more male than female deaths on the whole; but it has been commonly said that from puberty to middle life, females die faster than males. This is nearly true, but is only a part of the truth. These figures show that the great difference between the sexes is from 15 to 20 years of age;* when the excess of female deaths is 11 per cent. From 20 to 25, the figures indicate a small excess of *male* deaths. However I do not regard this as conclusive, because we know that unmarried women over 20 frequently put themselves down as under 20; and that this inaccuracy is extensive enough to be decidedly felt in the census. If then we take the larger division of 20 to 35 years old, we find that during these fifteen years, the male and female deaths are just equal. It appears then, that in the five first years of life there is a large excess of male deaths; that from 5 to 10 years of age, the male excess is very small; that from 10 to 15, the male excess is decided; but that at 15 the tide turns, and that until 20, the female deaths are largely in excess; that from 20 to 35 the male and female deaths are equal; that after 35 the male deaths are again in excess.

Causes of Death.

Tables T and V give the causes of death. There is, I am aware, great difference of opinion as to the best classification of disease; but I can only follow that which I find in this report of the Registrar-General.

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* A paper by Mr. Makeham, in "Assurance Magazine," January, 1866, pp. 306 and 311, notices the singular fact, that among the *males* of the *upper* classes, "from the age of 16 to the age of 23, the annual rate of mortality rises "rapidly, from about 8 to a maximum of 15 per 1,000; after which it gradually "diminishes."

Cancer.

Of all the diseases to which a separate column is assigned, the one I presume, about which there can be the least dispute is cancer. The number of deaths it causes is small, being only about 1 per cent. of all deaths; but it is twice as great among females as among males.

The *uniformity* of the number in different places is remarkable. In the whole of England and Wales, out of 10,000 persons living, 2 males and 4 females die of cancer each year. The same number of 2 males and 4 females die of it each year in Liverpool, Manchester, Leeds, and Wolverhampton. In Birmingham and Sheffield, there are also 2 male deaths, but 5 instead of 4 females; in London again, there are 2 males, but 6 females: in Bristol there are no less than 4 males and 6 females. Possibly the excess in these towns is caused by the influx to the hospitals of patients from a wider neighbourhood.

At a meeting of the British Medical Association lately held in Leamington, there arose a discussion on the question, whether cancer was a local disease, or whether it was a result of an ill condition of the body. If it were a result of ill condition, we should find more of it in an unhealthy place than in other places: more in Liverpool than in the whole of England and Wales. But in fact we find that out of 10,000 persons living, the same number die in Liverpool that die in the whole country.

Proportion from different Causes.

Of all the deaths that occur in the whole country, if we set aside those from unspecified "zymotic diseases," the highest number is that of lung diseases, viz. 14 out of 100. Brain diseases come next, with $\frac{12}{100}$: then phthisis with $\frac{11}{100}$; heart disease and dropsy $\frac{11}{100}$; cholera and diarrhœa $\frac{5}{100}$; typhus $\frac{4}{100}$; scrofula $\frac{4}{100}$; stomach and liver disease $\frac{4}{100}$; violent deaths $\frac{4}{100}$ as to males, and $\frac{2}{100}$ as to females.

Lung Disease and Phthisis.

We find as to lung disease, contrary to our expectation, that it prevails more among males than females, as 33 to 27. Even taking phthisis with lung disease, there are still more male deaths than female.

The fact that in Birmingham there was an excess of male deaths over female from these causes, led Dr. Greenhow to conjecture that the peculiar trades of the town injured the lungs of the males more than those of the females. But this table shows us that the male excess from lung disease in Birmingham is no greater than the male excess of the whole country. The same is true of Sheffield and Wolverhampton, and also of London. On the other hand, in Liverpool, Manchester, and Leeds, the male excess though considerable, is less by about one-fourth than in the hardware towns.

Phthisis alone.

In phthisis there is through the whole country an excess of *female* deaths of 1 in 13, or nearly 8 per cent.: but in all the towns I am considering, except Wolverhampton, there is an excess of *male* deaths. In Birmingham the male excess is no less than one-fourth, and in London it is even one-third.

If we put lung disease and phthisis together, as Dr. Greenhow did in his well-known paper of 1858, the great excess of male over female deaths, does seem to support the conjecture as to the Birmingham trades. But as there is a still greater excess in London and in Bristol, where the predominant occupations are altogether different, and as no excess is found in Wolverhampton (one of the hardware towns), it seems more probable that the male excess is owing to some other cause which is common to the great towns generally.

Yet taking the two sexes together, phthisis prevails less in several great towns than elsewhere. In Birmingham for instance, the female deaths from phthisis are fewer by 30 per cent. than they are on the average of the country, and even the male deaths are rather fewer. The worst towns in this respect are London, Bristol, Liverpool, and Manchester, which are nearly as bad as the whole country. The best is Wolverhampton.

Brain Disease.

Diseases of the brain cause rather more deaths than even phthisis. But they do not prevail most where many persons would have expected. They are considerably lower in London than in the whole country; they are very high in Leeds, and decidedly high in Sheffield. In Birmingham and Liverpool they are something lower than even in London.

Heart Disease and Dropsy.

Heart disease and dropsy have many deaths attributed to them; but fewer in the great towns generally than in the country at large. London approaches the general rate most nearly.

Cholera, Diarrhœa, Dysentery.

I come now to cholera and the cognate disorders: diseases which from their suddenness, and their prevalence at certain seasons, attract public attention. It is remarkable that all the deaths from cholera, diarrhœa, and dysentery, taken together, are throughout the country, fewer than one-twentieth of all deaths. But in the great towns they are far more: being in Liverpool, Birmingham, and Leeds, from one-eleventh to one-twelfth of all the deaths in those places respectively. They are fewer in London and Wolverhampton, and in Bristol they are as few as in the whole country.

Refuse Carted away in London and Bristol.

It is worthy of notice, that in London and in Bristol, the same old custom prevails, of carting away all refuse and ashes, at intervals of a few days, instead of allowing them to accumulate for months.

Typhus.

Typhus, as we should suppose, is more fatal in the great towns than in the country generally. The worst place in this respect is Wolverhampton; but Liverpool and Sheffield are nearly as bad, and Manchester approaches these two. Leeds and Birmingham are considerably better. Bristol, in spite of its narrow streets and "backs," stands very well; and in London (the whole metropolis) there is rather less typhus than in the whole country. Here again we have London and Bristol, with their frequent scavengers, standing at the head of the list.

The deaths from typhus are only about 1 in 25 of all deaths.

Scrofula, &c.

The deaths from scrofula and its cognate diseases, are about as many as those from typhus: they are numerous in the great towns.

The worst town is Leeds with a number not very far from twice as large as that of the whole country. Liverpool is nearly as bad. Then come, in order of demerit, London, Sheffield, Manchester, and Bristol. Birmingham is better than Bristol, though decidedly worse than the whole country. Wolverhampton is actually better than the whole country, as about $\frac{15}{16}$.

Violent Deaths.

The only other column I will make use of, is that of deaths by violence. I am surprised to find the greatest proportionate number in Bristol; but this is probably owing to the fact that the registration district is only a small part of the town, and includes I believe the docks and the "float." Liverpool is the next worse; then come Wolverhampton, Manchester, Birmingham, and Leeds: London and Sheffield have the smallest number.

Birmingham Compared.

If then we compare Birmingham with the other great towns, we find that as to deaths from *lung-disease*, there are five towns worse than Birmingham, and two (London and Sheffield) better:

that as to *phthisis*, five towns are worse, Leeds is the same, and Wolverhampton is better: that as to *brain-disease*, six towns are worse, and London is a little better: that as to *cholera, &c.*, three towns are worse, Sheffield is the same, and three towns (London, Bristol and Wolverhampton) are better: that as to *typhus*, five towns are worse, while London and Bristol are better: that as to "*other zymotic* diseases," four towns are worse, and three (London, Bristol and Leeds) are better: that as to scrofula, &c., six towns are worse, and Wolverhampton alone is better: that as to deaths by *violence*, four towns are worse, and three (London, Léeds, and Sheffield) are better.

Death-Rate generally.

As regards all deaths from whatever causes, five of these towns are worse than Birmingham, Bristol is about the same, and London (the whole metropolis) appears decidedly better.

Taking Boroughs instead of Districts.

As I have already remarked however, the figures given do not indicate the mortality of the entire towns, but only of the poor-law districts known by the names of the towns. The borough of Bristol, *e.g.*, contained in 1861, a population of 154,000; the registration district contains only 66,000 (less than half), though there is not nearly so great a difference in the other towns. If we take the boroughs, we approach much nearer to the natural limits of the towns, and we get the means of a fairer comparison with London, of which the boundaries are very wide.

Ten Years' Death-rate.	Liverpool.	Manchester.	Salford.	Leeds.	Birmingham.	Bristol.	Hull.	London.
1. In registration districts	33	31½	28½	28	26½	26½	24½	23½
2. In boroughs	30	29½	26	26	25	23	24	23½

London and Bristol.

We see that the registration district of Bristol has a death-rate much worse than that of London, but that the *city* (or borough) of Bristol has a death-rate rather better than that of London.

Liverpool and Manchester.

Comparing the registration districts, Liverpool is much worse than Manchester: comparing the boroughs, there is little difference between them. The registration district of Birmingham has the same death-rate as that of Bristol: the borough of Birmingham has a far worse death-rate than the borough, or city, of Bristol.

Other Considerations.

No doubt there are other elements to be taken into account in making a final comparison of the mortality of two places. A fast increasing place has many children, and therefore many deaths; and I have elsewhere shown reasons for believing that comparing Birmingham with London, a part of the Birmingham mortality is accounted for in this way. It has been proved also, that the deaths are more numerous among the working classes than among the middle and upper classes, and that this is especially true of children. But the metropolis has a far greater proportion than is found in Birmingham, of persons of the middle and upper classes.

Another difference arises from the number of female servants kept in one place and in another: because a large part of these, go away in case of illness and die elsewhere; besides that they are generally in the prime of life, and of more than average healthiness. On this ground I contend that the true mortality is best ascertained by comparing the deaths of males. In some cases, the situation of workhouses, and hospitals, modifies the returns.

Taking all these circumstances into account, I have maintained in another paper, and I still maintain, that though the death-rate of Birmingham appears in the register as $\frac{27}{1000}$, while that of London appears as $\frac{24}{1000}$, the true death-rate of Birmingham is considerably less than that of London.

TABLE O.—*Population of the* BOROUGH *of Birmingham and*

1	2 1801. Census	3 1811. Census.	4 1811. Increase.	5 1811. Increase per Cent.	6 1821. Census.	7 1821. Increase.	8 1821. Increase per Cent.	9 1831. Census.	10 1831. Increase.	11 1831. Increase per Cent.
England and Wales	8,892,536	10,164,256	1,271,720	14	12,000,236	1,835,980	18	13,896,797	1,896,561	16
Birmingham (borough) ...	70,670	82,753	12,083	17	101,722	18,969	23	143,896	42,264	41
Sheffield(borough	45,755	53,231	7,476	16	65,275	12,044	23	91,692	26,417	40
Wolverhampton (Parliamentary borough)	30,584	43,190	12,606	41	53,011	9,821	25	67,514	14,503	28
Manchester city (ex. Salford)	76,788	91,130	14,342	19	129,035	37,905	42	187,022	57,987	45
Leeds (borough)	53,162	62,534	9,372	18	83,796	21,262	34	123,393	39,597	47
Liverpool (borough) ...	82,295	104,104	21,809	26	138,354	34,250	33	201,751	63,397	46
London (the Metropolis)	958,863	1,138,815	179,952	19	1,378,947	240,132	22	1,654,994	276,047	20
Bristol (city or borough)......	61,153	71,433	10,280	17	85,108	13,675	19	104,408	19,300	23
Totals *including* London	1,379,270	1,647,190	267,920	19	2,035,248	388,058	24	2,574,670	539,512	27
Totals *excluding* London	420,407	508,375	87,968	21	656,301	147,926	29	919,676	263,465	40

TABLE P.—*Out of every* 1,000 *Persons of both Sexes* TAKEN

1		2 All Ages.	3 Under 5 Years.	4 5 to 10.	5 10 to 15	6 15 to 20
England and Wales	M.	487	68	58	53	48
	F.	513	67	58	52	49
Excess or deficiency of females, per cent.		+5·1	−1·5	0	−2	+2
Birmingham	M.	489	72	59	52	48
	F.	511	72	60	50	50
Excess or deficiency of females, per cent.		+4·3	0	+2	−4	+4
Sheffield	M.	502	75	61	51	46
	F.	498	76	62	50	46
Excess or deficiency of females, per cent.		−·8	+1	+1·5	−2	0
Wolverhampton	M.	507	77	63	53	47
	F.	493	76	63	52	45
Excess or deficiency of females, per cent.		−2·8	−1	0	−2	−5
Manchester	M.	474	67	55	48	46
	F.	526	67	55	48	51
Excess or deficiency of females, per cent.		+10	0	0	0	+10
Leeds	M.	480	66	57	46	46
	F	520	67	57	49	51
Excess or deficiency of females, per cent.		+7 7	+1	0	+6	+10
Liverpool	M.	492	65	53	47	47
	F.	508	64	52	45	48
Excess or deficiency of females, per cent.		+3·1	−2	−2	−5	+2
London	M.	466	65	53	47	43
	F.	534	65	54	48	50
Excess or deficiency of females, per cent.		+12·8	0	+2	+2	+14
Bristol	M.	463	60	51	50	46
	F.	537	61	52	48	54
Excess or deficiency of females, per cent.		+13·8	+2	+2	−4	+15

f Seven other Boroughs and Cities from 1801 *to* 1861.

12	13 1841.	14	15	16 1851.	17	18	19 1861.	20	21 Increase per Cent. from 1801 to 1861.	22 Population, 1861 / Population, 1801
Census.	Increase.	Increase per Cent.	Census.	Increase.	Increase per Cent.	Census.	Increase.	Increase per Cent.		
15,914,148	2,017,351	14	17,927,609	2,013,461	13	20,066,221	2,138,615	12	126	2·26 times as large
182,922	38,996	27	232,841	49,919	27	296,076	63,235	27	319	4·19
111,091	19,399	21	135,310	24,219	22	185,172	49,802	37	305	4·05
93,245	25,731	38	119,748	26,503	28	147,670	27,922	23	382	4·82
242,983	55,961	30	316,213	73,230	30	357,979	41,766	13	366	4·66
152,074	28,681	23	172,270	20,196	13	207,165	34,895	20	290	3·90
286,487	84,736	42	375,955	89,468	31	443,938	67,983	18	440	5·40
1,948,417	293,423	18	2,362,236	413,819	21	2,803,989	441,753	19	192	2·92
125,146	20,738	20	137,328	12,182	10	154,093	16,765	12	152	2·52
3,142,365	567,605	22	3,851,901	709,536	23	4,596,022	744,121	19	233	3·33
1,194,948	274,182	30	1,490,665	295,717	25	1,793,033	302,368	20	326	4·26

OGETHER, *the following are the number living in* 1861 *at each Age.*

7 20 to 25	8	9	10 Ten Years in each Column.	11	12	13	14 85 and upwards.
	25 to 35.	35 to 45.	45 to 55.	55 to 65.	65 to 75.	75 to 85.	
43	70	57	42	28	15	6	⅔
48	78	61	44	30	18	7	1
+12	+10	+6½	+4½	+7	+20	+29	+50
49	79	58	39	23	9	2	⅓
54	83	61	41	24	11	3	½
+10	+5	+3	+5	+8	+18	+33	+50
49	83	63	40	22	9	2	0
48	80	59	39	23	12	3	⅓
−2	−4	−7	−3	+4	+25	+33	200
46	77	64	41	24	11	3	[illegible]
46	76	56	39	22	11	4	[illegible]
0	−1	−14	−6	−9	0	+25	+70
45	77	59	42	23	9	2	0
57	91	67	46	27	12	4	⅓
+21	+15	+12	+9	+15	+25	+50	+200
49	78	59	42	25	10	2	0
55	85	64	46	28	13	4	⅓
+11	+8	+8	+9	+11	+23	+50	+200
51	85	68	46	22	7	2	0
55	93	70	44	24	9	3	½
+8	+9	+3	−5	+8	+22	+33	+200
44	76	61	41	23	11	3	⅔
55	91	70	47	30	16	5	1
+20	+16	+13	+13	+23	+31	+40	+50
42	71	58	42	26	12	4	[illegible]
55	85	68	50	34	21	8	1½
+24	+16	+13	+16	+24	+43	+50	+70

TABLE Q.—*Vital Statistics of some of the Principal Cities and Towns of England*
Journal," *June*, 1864,

1 Population, in Thousands, 1861, Municipal, by the Census, 1, xxi.	2 Population, in Thousands, 1861, by the Registrar-General, 23, 292, &c.	3 Districts, Towns, &c.	4 Number of Acres to 100 Persons according to Registrar-General, 23, 6, &c.	5 Increase of Population per Cent. in 10 Years, Registrar-General, 23, 196.	6 Number of Persons in a House by the Census.	7 Death-rate, Male and Female, 1841-50, to 1,000 of Population, Registrar-General, 13, 194.	8 Death-rate, Male and Female, 1851-60, to 1,000 of Population, Registrar-General, 23, 220.	9 Male Death-rate, 1851-60, to 1,000 of Population, Registrar-General, 23, 218, and Census, 194.
20,066	20,066	England and Wales	186·00	11·93	5·37	22·28	22·24	23·05
—	213	Birmingham parish	1·25	22·23	5·01	26·16	26·51	28·05
296	—	„ borough	—	—	—	—	25·20	26·41
13	16	Edgbaston	—	—	—	—	14·90	17·33
—	—	„ parish	—	—	—	—	—	—
185	128	Sheffield	8·21	24·44	4·87	26·65	28·45	29·51
61	127	Wolverhampton	42·47	21·83	5·17	27·24	27·61	28·45
339	244	Manchester	5·18	6·81	5·69	33·08	31·48	33·65
—	—	„ and Chorlton	—	—	5·51	30·69	28·60	—
102	105	Salford	4·58	20·35	5·36	27·65	26·00	27·66
207	118	Leeds	1·79	16·11	4·64	29·56	27·72	29·43
444	270	Liverpool parish	·58 land	4·07	7·28	39·22	33·29	35·23
—	—	„ and West Derby	—	—	6·75	34·95	—	—
112	2,804	London	2·79	18·70	7·80	24·55	23·77	25·70
—	66	Bristol district	2·79	·47	6·53	28·60	26·71	29·68
154	—	„ borough	—	—	—	—	—	—
—	95	Clifton	—	—	—	—	17·50	21·15

***in the Two Decades,* 1841-50 *and* 1851-60. *Taken principally from the* "Statistical *and January,* 1865.**

10	11	12	13	14	15	16	17	18	19
Excess of Females over Males per Cent., 1861, Census, 192.	Male Death-rate under 1 Year to 1,000 Births, Registrar-General, xiv to xxiii, and xxiii, 196.	Male Death-rate over 1 and under 5 Years (Total of Four Years).	Male Death-rate from Birth to under 5 Years. (Five Years.)	Proportion of Male Death-rate under 1 to General Male Death-rate.	Number of Male Deaths in the 4 Years over 1 and under 5, in Proportion to 100 Male Deaths under 1.	Ten Years' Registered Births to 100 Married Women from 20 to 45 Years Old.	Of 100 Persons Married in 1862, there Signed their Names,		
							Men and Women together.	Men only.	Women only.
5·25	161	105	266	7·00	65	299	72	76	67
4·65	189	140	329	6·74	74	313	69	74	63
5·61	—	—	—	—	—	—	—	—	—
44·50	—	—	—	—	—	—	—	—	—
57·20	—	—	—	—	—	—	—	—	—
·97	196	151	347	6·64	77	314	66	74	57
minus 2·93	203	153	356	7·14	75	348	55	60	49
10·96	220	168	388	6·54	76	300	69	82	55
11·53	205	156	361	—	76	—	—	—	—
12·42	198	145	343	7·16	73	305	62	74	49
6·89	206	146	352	7·00	71	298	68	69	67
3·05	240	227	467	6·81	95	252	67	75	58
5·80	—	—	—	—	—	—	—	—	—
14·48	161	137	298	6·26	85	270	86	90	83
16·00	177	136	313	5·96	76	276	78	88	74
23·18	—	—	—	—	—	—	—	—	—
73·50	—	—	—	—	—	—	—	—	—

TABLE R.—*Annual Death-rate at each Age to* 10,000 *Males and* 10,000 *Females of the Females separately.* (*From* Registrar-

1		2 Under 5 Years Old.	3 5 to 10.	4 10 to 15.	5 15 to 20.	6 20 to 25.
England and Wales	M.	724	85	49	67	88
	F.	627	84	51	74	85
Excess of male deaths, per cent.		15	1	4	minus 11	3½
Birmingham parish	M.	1,003	103	50	65	79
	F.	887	99	49	66	74
Excess of male deaths, per cent.		13	4	2	minus 2	7
Sheffield	M.	1,052	119	61	87	92
	F.	952	117	47	75	90
Excess of male deaths, per cent.		11	2	30	16	2
Wolverhampton	M.	1,102	102	56	64	78
	F.	994	92	49	58	84
Excess of male deaths, per cent.		11	11	14	10	minus 7
Manchester (ex. Salford)	M.	1,238	128	57	84	101
	F.	1,107	122	56	78	95
Excess of male deaths, per cent.		12	5	2	8	6
Leeds	M.	1,089	100	62	81	94
	F.	966	96	55	73	88
Excess of male deaths, per cent.		13	4	13	11	7
Liverpool	M.	1,374	146	58	82	119
	F.	1,265	143	59	72	95
Excess of male deaths, per cent.		9	2	minus 2	14	25
London	M.	831	97	45	62	83
	F.	729	92	41	54	65
Excess of male deaths, per cent.		14	5	10	15	28
Bristol	M.	951	126	70	85	104
	F.	812	101	61	74	80
Excess of male deaths, per cent.		17	25	15	13	30

same Age, in Birmingham and Seven other POOR LAW DISTRICTS (1851-60), *Males and* General's Supplement to Report xxv.)

7	8	9	10	11	12	13	14
Ten Years.						85 and upwards.	All Ages.
25 to 35.	35 to 45.	45 to 55.	55 to 65.	65 to 75.	75 to 85.		
96	125	180	308	653	1,467	3,101	230
99	121	152	270	587	1,343	2,896	213
minus 3	3	12	14	11	9	7	8
101	162	259	458	953	1,979	3,889	280
98	137	191	352	784	1,744	3,454	250
3	18	36	30	22	13	13	12
103	144	254	469	968	2,059	3,400	295
108	140	195	368	822	1,636	3,850	274
minus 5	3	30	27	18	26	minus 12	88
91	136	210	367	746	1,575	2,660	284
97	128	160	292	662	1,556	2,284	267
minus 6	7	31	26	13	1	16	6
129	203	317	527	1,007	1,953	4,425	336
123	174	272	448	842	1,661	3,078	295
5	17	17	17	20	18	44	14
112	169	246	472	929	2,133	3,842	294
116	139	196	372	776	1,585	3,122	261
minus 3	22	25	27	20	34	23	12
160	229	331	535	1,063	1,985	2,833	352
137	188	269	465	851	1,569	2,929	314
17	22	23	15	25	26	minus 3	12
105	163	247	424	852	1,719	3,144	257
87	128	180	333	696	1,496	2,889	218
21	28	37	27	22	15	9	18
142	196	296	440	818	1,731	3,324	297
97	142	191	306	625	1,454	2,442	241
46	38	55	44	31	18	36	23

TABLE S.—EXCESS *of the Death-rate at each Age, over*

1	2 Sex.	3 Under 5 Years.	4 5 to 10.	5 10 to 15.	6 15 to 20.	7 20 to 25.
		Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.
Birmingham parish	M.	39	21	2	−3	−10
	F.	41	18	−4	−11	−13
Sheffield	M.	45	40	24	30	5
	F.	52	39	−8	1	6
Wolverhampton............	M.	52	20	14	−4	11
	F.	59	10	−4	−22	−1
Manchester (ex. Salford)	M.	71	51	16	25	15
	F.	77	45	10	5	12
Leeds	M.	50	18	27	21	7
	F.	54	14	8	−1	4
Liverpool	M.	90	72	18	22	35
	F.	102	70	15	−3	12
London	M.	15	15	−8	−8	−6
	F.	16	10	−20	−27	−22
Bristol..............................	M.	31	48	43	27	18
	F.	30	20	20	0	−6

TABLE T.—*Annual Death-rate from Different Causes to*

1	2 Sex.	3 All Causes.	4 Typhus.	5 Cholera, Diarrhœa, and Dysentery.	6 Other Zymotic Diseases.	7 Cancer.	8 Phthisis.
England and Wales	M.	230	9	11	31	2	26
	F.	213	9	10	28	4	28
Birmingham (parish)....	M.	280	10	23	41	2	30
	F.	250	11	21	38	5	24
Sheffield	M.	295	14	21	43	2	34
	F.	274	12	23	45	5	30
Wolverhampton............	M.	284	14	18	41	2	23
	F.	267	14	18	42	4	25
Manchester	M.	336	18	26	46	2	38
	F.	295	12	22	42	4	36
Leeds	M.	294	11	24	35	2	30
	F.	261	11	21	34	4	26
Liverpool	M.	352	14	30	53	2	41
	F.	314	18	28	50	4	39
London	M.	257	9	16	40	2	33
	F.	218	8	14	34	6	25
Bristol	M.	297	10	14	38	4	36
	F.	241	9	12	32	6	29

the Corresponding Death-rate of England and Wales.

8	9	10	11	12	13	14	15
Ten Years.						85 and upwards.	All Ages.
25 to 35.	35 to 45.	45 to 55.	55 to 65.	65 to 75.	75 to 85.		
Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.
5	30	44	49	46	35	25	22
−1	13	26	34	33	30	19	17
7	15	41	52	48	40	10	28
9	16	28	36	40	22	33	29
−5	9	17	19	14	7	−14	23
−2	6	5	8	15	16	−21	25
34	62	76	71	54	33	42	46
24	44	80	66	43	24	6	38
17	35	37	53	42	45	24	28
17	15	29	38	32	18	8	22
67	83	84	74	63	35	−9	53
38	55	77	65	45	17	1	47
9	30	37	38	30	17	1	12
−12	6	18	23	19	11	0	2
48	57	64	43	25	18	7	29
−2	17	26	13	7	8	−16	13

10,000 *Males and* 10,000 *Females Living, from* 1851 *to* 1860.

9 Scrofula, Tabes, Mesenteries, and Hydrocephalus.	10 Disease of Brain.	11 Diseases of Heart and Dropsy.	12 Diseases of Lungs.	13 Diseases of Stomach and Liver.	14 Diseases of Kidneys.	15 Violent Deaths.	16 Other Causes.
9	30	12	33	10	3	11	43
7	25	13	27	10	1	4	46
11	29	12	52	10	4	14	42
8	23	12	43	11	2	8	43
13	42	10	50	11	3	11	42
9	34	12	41	11	1	4	47
8	34	12	55	10	2	18	46
7	31	12	45	10	1	6	51
12	44	11	58	10	4	18	53
9	34	13	50	10	2	8	53
16	47	12	57	11	3	13	36
13	37	14	48	12	1	5	36
16	37	12	67	11	3	21	44
12	30	12	58	11	2	8	47
13	28	13	45	10	4	11	32
9	22	12	37	10	2	4	35
12	35	14	54	10	6	23	40
8	27	16	43	11	2	7	39

TABLE V.—*Proportion of Deaths from* EACH

1	2 Sex.	3 Typhus.	4 Cholera, Diarrhœa, and Dysentery.	5 Other Zymotic Diseases.	6 Cancer.	7 Phthisis.
		Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.
England and Wales	M.	3·9	4·8	13·5	·87	11·3
	F.	4·2	4·7	13·1	1·9	13·1
Birmingham parish	M.	3·6	8·2	14·6	·71	10·7
	F.	4·4	8·4	15·2	2·	9·6
Sheffield	M.	4·7	7·1	14·6	·68	11·5
	F.	4·4	8·4	16·4	1·82	10·
Wolverhampton............	M.	4·9	6·3	14·4	·7	8·1
	F.	5·2	6·7	15·6	1·5	9·4
Manchester....................	M.	3·8	7·7	13·5	·59	11·3
	F.	4·1	7·4	14·2	1·35	12·2
Leeds	M.	3·7	8·2	11·9	·68	10·2
	F.	4·2	8·0	13·0	1·53	10·0
Liverpool	M.	4·0	8·5	15·1	·57	11·6
	F.	4·1	9·0	15·0	1·27	12·4
London	M.	3·5	6·2	15·6	·78	12·8
	F.	3·5	6·4	15·6	2·8	11·5
Bristol............................	M.	3·4	4·7	12·8	1·34	12·1
	F.	3·7	5·0	13·3	·74	12·

Cause, to Deaths from ALL *Causes* (1851-60).

8 Scrofula, Tabes, Mesenteries, and Hydrocephalus.	9 Disease of Brain.	10 Diseases of Heart and Dropsy.	11 Diseases of Lungs.	12 Diseases of Stomach and Liver.	13 Diseases of Kidneys.	14 Violent Deaths.	15 Other Causes.
Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.
3·9	13·	5·2	14·3	4·3	1·8	4·6	18·7
3·3	11·7	6·1	12·7	4·7	·5	1·9	21·6
3·9	10·4	4·3	18·6	8·6	1·5	5·	15·
3·2	9·2	4·8	17·2	4·4	·8	3·2	17·2
4·4	14·2	8·4	17·	8·7	1·	3·7	14·2
3·3	12·4	4·4	15·	4·	·4	1·4	17·1
2·8	12·0	4·2	19·4	8·5	·7	6·3	16·2
2·6	11·6	4·5	16·8	8·7	·4	2·2	19·1
3·6	13·1	8·3	17·2	8·	1·2	5·4	15·8
3·1	11·5	4·4	16·9	8·4	·7	2·7	18·0
5·4	16·0	4·	19·3	8·7	1·	4·4	12·2
5·0	14·2	5·4	18·4	4·6	·4	1·9	13·8
4·5	10·5	8·4	18·1	8·1	·9	6·	12·5
·8	9·5	8·8	18·5	8·5	·6	2·5	15·
5·1	10·9	5·1	17·5	8·9	1·6	4·3	12·4
4·1	10·1	5·5	17·0	4·6	·9	1·8	16·0
4·0	11·8	4·7	18·2	8·4	2·	7·7	13·5
3·3	11·2	6·6	17·8	4·6	·8	2·9	16·2

STATISTICS *of* METROPOLITAN *and* PROVINCIAL GENERAL HOSPITALS *for* 1864.

THIS return, though far from complete, is issued in accordance with the promise made in the Report for 1863, published in the *Journal* of this Society in December last; and it is hoped that the promise, made at the same time, to publish the facts relating to the year 1865 in the course of the current year, may be fulfilled.

The Statistical Society, however, though prepared to carry out its part of the engagement entered into at the meeting held at Guy's Hospital in the summer of 1861, is dependent, for the completion of the programme then put forward, on the co-operation of the authorities of the several hospitals.

On comparing the reports for the four years 1861-64, it will be seen that this co-operation is becoming year by year less complete. In the Report for 1863, it was stated that no returns had been received from the University College Hospital, the Middlesex, or the Great Northern; to this list, for the year 1864, the Charing Cross Hospital and the Metropolitan Free Hospital must be added.

Nevertheless, the detailed information received from nine metropolitan and ten provincial hospitals must be considered as an acceptable addition to our hospital statistics.

One of the most striking facts established by these figures is the high rate of mortality prevailing in the hospitals of London during the year 1864; the returns from provincial hospitals showing also an increase of mortality, though to a less extent.

When the facts for the year 1865 shall be printed, it may be possible to establish, on the basis of the figures for the five years embraced in the returns, some general truths, or hospital constants, admitting of application in all future researches respecting the true causes of mortality in hospitals.

The resolutions of the meeting held at Guy's Hospital, June 21st, 1861, are again appended in an abbreviated form.

1. That the metropolitan hospitals should adopt one uniform system of registration of patients.

2. That at every metropolitan hospital, there be kept one or more books, which shall comprise the following particulars relating to the patients:—the Age, Sex, Social Relation (Mar., Single, Wid.), Occupation, Name of Disease, or Injury, Date of Admission and Discharge, Result, Days in Hospital, and a column for remarks.

3. That those hospitals which have not yet adopted a system of registration

embracing the above particulars, are recommended to employ a register book containing all the annexed particulars in printed columns:—

Number of Patients.
Date of Admission.
Name.
Residence (Street and Parish).
Medical Officer.
Ward.
Age.
Male.
Female.
Soc. Relat. (M. S. W.)
Occupation.
Name of Disease or Injury.
Date of Discharge.
Result.
Days in Hospital.
Remarks.

And that the first set of headings commencing with "Number," and terminating with "Ward," be printed on the left hand page, and that the remainder be placed on the right hand page of the register; and also that each page of the register book be ruled to contain either 25, 50, or 100 horizontal lines, each line to give the particulars of an individual case.

4. That as far as practicable in the column of the register book headed Disease or Injury, the nomenclature employed by the Registrar-General be adopted, with the additions contained in the forms submitted by Miss Nightingale to the International Statistical Congress.

5. That the Council of the *Statistical Society* having kindly undertaken to publish in their *Journal* some of the leading statistics of the metropolitan hospitals, if provided annually with the necessary information, the authorities of the several metropolitan hospitals be requested, at the close of each year, to draw up and communicate to that Society a summary of the statistics of the hospital for the year; such summary to comprise the data tabulated in the manner represented on the accompanying form.

6. That it be suggested to the authorities of the several metropolitan hospitals, that it will be of great public advantage if they will also publish annually a full report of the statistics of disease treated within the hospital, following, as far as practicable, the arrangement and nomenclature employed by the Registrar-General and by Miss Nightingale in the paper referred to in the third resolution.

7. That in the opinion of this meeting, it is essential that there should be in every hospital an officer charged specially with the duty of attending to the registration of patients.

METROPOLITAN

Table I.—*General Results.* (*No distinction*

Hospital.	*Remaining 1st January,* 1864.	Admitted during the Year.	Total.	Discharged Well or Convalescent.	Relieved.
	No.	No.	No.	No.	No.
St. Bartholomew's	553	5,543	6,096	4,324	—
Guy's	526	4,985	5,511	2,538	1,504
St. Thomas's (temporary)	200	1,884	2,084	1,122	442
London	385	4,234	4,619	1,908	1,628
St. George's	275	4,019	4,294	1,382	2,140
Middlesex	—	—	—	—	—
St. Mary's	144	1,802	1,946	1,027	468
Westminster	153	1,858	2,011	1,651	—
King's College	115	1,362	1,477	620	338
University	—	—	—	—	—
Royal Free	87	1,405	1,492	772	481
Charing Cross	—	—	—	—	—
Metropolitan Free	—	—	—	—	—
Great Northern	—	—	—	—	—
Totals (*so far as returned*)	2,438	27,092	29,530	15,344	7,001

Table II.—*Medical and Surgical*

Hospital.	Medical Wards.					
	Remaining 1st January, 1864.	Admitted during the Year.	Total.	Discharged.	Died.	*Remaining 1st January,* 1865.
	No.	No.	No.	No.	No.	No.
St. Bartholomew's	218	2,043	2,261	1,647	401	213
Guy's	216	1,921	2,137	1,652	290	195
St. Thomas's (tempy.)	86	876	962	747	137	78
London	109	1,156	1,265	986	167	112
St. George's	116	1,832	1,948	1,602	229	117
Middlesex	—	—	—	—	—	—
St. Mary's	64	876	940	735	137	68
Westminster	—	—	—	—	—	—
King's College	70	770	840	624	151	65
University	—	—	—	—	—	—
Royal Free	21	338	359	285	52	22
Charing Cross	—	—	—	—	—	—
Metropolitan Free	—	—	—	—	—	—
Great Northern	—	—	—	—	—	—
Totals (*so far as returned*)	900	9,812	10,712	8,278	1,564	870

HOSPITALS, 1864.

of Sex; nor of Medical or Surgical Cases.)

Unrelieved.	Discharged for Special Reasons.	Died.	*Remaining 1st January,* 1865.	Brought in Dead.	Hospital.
No.	No.	No.	No.	No.	
300	315	617	540	21	St. Bartholomew's
419	61	480	509	12	Guy's
91	—	236	189	4	St. Thomas's (tempy.)
19	234	445	385	17	London
118	—	344	310	—	St. George's
—	—	—	—	—	Middlesex
22	71	202	151	5	St. Mary's
—	—	197	163	4	Westminster
121	60	206	123	9	King's College
—	—	—	—	—	University
27	15	102	89	6	Royal Free
—	—	—	—	—	Charing Cross
—	—	—	—	—	Metropolitan Free
—	—	—	—	—	Great Northern
1,117	756	2,829	2,459	78	Totals (*so far as returned*)

Cases, without distinction of Sex.

Surgical Wards.						Hospital.
Remaining 1st January, 1864.	Admitted during the Year.	Total.	Discharged.	Died.	*Remaining 1st January,* 1865.	
No.	No.	No.	No.	No.	No.	
335	3,500	3,835	3,292	216	327	St. Bartholomew's
310	3,064	3,374	2,870	190	314	Guy's
114	1,008	1,122	908	103	111	St. Thomas's (tem.)
276	3,078	3,354	2,803	278	273	London
159	2,187	2,346	2,038	115	193	St. George's
—	—	—	—	—	—	Middlesex
80	926	1,006	853	70	83	St. Mary's
—	—	—	—	—	—	Westminster
45	592	637	524	55	58	King's College
—	—	—	—	—	—	University
66	1,061	1,127	1,010	50	67	Royal Free
—	—	—	—	—	—	Charing Cross
—	—	—	—	—	—	Metropolitan Free
—	—	—	—	—	—	Great Northern
1,385	15,416	16,801	14,298	1,077	1,426	Totals (*so far as returned*)

TABLE III.—*Average Number of Patients and Mean Residence.*

Hospital.	All Cases.				Medical Cases.				Surgical Cases.			
	Average Number Resident.			Mean Residence.	Average Number Resident.			Mean Residence.	Average Number Resident.			Mean Residence.
	Males.	Females.	Total.		Males.	Females.	Total.		Males.	Females.	Total.	
	No.	No.	No.	Days.	No.	No.	No.	Days.	No.	No.	No.	Days.
St. Bartholomew's	291	257	548	32	105	108	213	31	185	150	335	33
Guy's	296	201	497	33	105	93	198	34	191	108	299	32
St. Thomas's	—	—	186	37	—	—	—	—	—	—	—	—
London	242	127	369	32	61	49	110	35	181	78	259	31
St. George's	167	133	300	31	58	63	121	26	109	70	179	35
Middlesex	—	—	—	—	—	—	—	—	—	—	—	—
St. Mary's	82	65	147	30	29	35	64	27	53	29	82	31
Westminster	—	—	—	—	—	—	—	—	—	—	—	—
King's College	59	50	109	—	29	33	62	—	30	17	47	—
University	—	—	—	—	—	—	—	—	—	—	—	—
Royal Free	38	44	82	23	9	10	19	24	29	34	63	22
Charing Cross	—	—	—	—	—	—	—	—	—	—	—	—
Metropolitan Free	—	—	—	—	—	—	—	—	—	—	—	—
Great Northern	—	—	—	—	—	—	—	—	—	—	—	—
Totals (*so far as returned*)	1,175	877	2,238	Average 31	396	391	787	Average 29	778	486	1,264	Avge. 31

TABLE IV.—*Rate of Mortality.*

Hospital.	All Cases.			Medical Cases.			Surgical Cases.		
	Males.	Females.	Males and Females.	Males.	Females.	Males and Females.	Males.	Females.	Males and Females.
	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.
St. Bartholomew's	12·4	9·2	11·1	23·6	14·9	19·5	6·6	5·3	6·1
Guy's	10·0	8·2	9·6	17·9	10·7	14·9	6·8	5·0	6·2
St. Thomas's	—	—	12·7	—	—	—	—	—	—
London	11·0	9·5	10·5	18·7	9·2	14·6	8·7	9·7	9·0
St. George's	8·4	7·0	8·0	14·3	8·7	11·7	4·8	4·7	4·9
Middlesex	—	—	—	—	—	—	—	—	—
St. Mary's	10·2	8·3	9·4	16·6	10·5	13·7	5·6	4·9	5·4
Westminster	—	—	—	—	—	—	—	—	—
King's College	17·1	14·5	16·0	25·6	14·1	19·5	8·6	10·5	9·5
University	—	—	—	—	—	—	—	—	—
Royal Free	7·0	7·5	7·3	13·4	17·5	15·5	5·3	4·0	4·7
Charing Cross	—	—	—	—	—	—	—	—	—
Metropolitan Free	—	—	—	—	—	—	—	—	—
Great Northern	—	—	—	—	—	—	—	—	—
Average (*so far as returned*)	10·8	9·2	10·6	18·6	12·2	15·6	6·6	6·3	6·5

⁎ TABLE IV.—The death-rate in this and the corresponding table of former reports is generally that stated in the returns; but when not so stated, it has been computed thus:

$$\frac{\text{Annual deaths}}{\text{Annual admissions} + \text{patients at the beginning} - \text{those at the end of the year.}}$$

TABLE V.—*Admissions and Deaths in General and Special Wards.*

Hospital.	General Wards. (Medical and Surgical.)			Special Wards.		General and Special Wards.		
	Admitted.	Died.	Rate of Mortality.	Admitted.	Died.	Admitted.	Died.	Rate of Mortality.
	No.	No.	Per cnt.	No.	No.	No.	No.	Per cnt.
St. Bartholomew's...	5,248	600	11·43	848	17	6,096	617	10·10
Guy's	3,960	448	11·31	1,026	12	4,986	460	9·23
St. Thomas's........	1,884	240	12·74	—	—	1,884	240	12·74
London	—	—	—	No accou	nt kept	—	—	—
St. George's	4,294	344	8·01	None	—	4,294	344	8·01
Middlesex........	—	—	—	—	—	—	—	—
St. Mary's........	1,946	207	10·63	125	3	2,071	210	10·40
Westminster........	1,858	197	10·60	None.	None.	1,858	197	10·60
King's College	1,362*	204	14·97	80	2	1,442	206	14·28
University	—	—	—	—	—	—	—	—
Royal Free	—	—	—	—	—	—	—	—
Charing Cross	—	—	—	—	—	—	—	—
Metropolitan Free..	—	—	—	—	—	—	—	—
Great Northern ...	—	—	—	—	—	—	—	—
Average (*so far as returned*)	20,552	2,240	Average 11·38	2,079	34	22,631	2,274	Average 10·77

* Exclusive of 145 women confined in the Nightingale lying-in wards.

ADDITIONAL TABLE.—*Rate of Mortality in the General Wards for the Years* 1861, 1862, 1863, *and* 1864.

Hospital.	1861.	1862.	1863.	1864.
	Per cnt.	Per cnt.	Per cnt.	Per cnt.
St. Bartholomew's........	12·3	12·5	11·7	12·7
Guy's	11·2	11·8	11·9	11·8
St. Thomas's (temporary)........	9·8	8·8	10·4	12·4
London	8·4	7·7	8·8	10·5
St. George's	8·7	8·4	8·3	8·6
Middlesex	11·6	—	—	—
St. Mary's	10·9	10·0	10·3	9·9
Westminster	9·9	10·4	9·0	10·7
King's College	11·1	10·1	12·9	16·0
University	11·6	—	—	—
Royal Free........	6·7	7·3	6·5	7·3
Charing Cross	8·4	8·6	7·9	—
Metropolitan Free........	7·1	5·3	10·9	—
Great Northern........	8·3	4·2	—	—
Average (*so far as returned*)	9·7	8·8	9·9	11·1

*** ADDITIONAL TABLE.—The rates of mortality in this table have been calculated afresh from the data supplied by the several hospitals.

COUNTY

Table (I).—*General Results.* (*No distinction*

Hospital.	*Remaining 1st January,* 1864.	Admitted during the Year.	Total.	Discharged Well or Convalescent.	Relieved.
	No.	No.	No.	No.	No.
York County	—	—	—	—	—
Devonshire (Buxton, Derbyshire)	13	972	985	128	735
Norfolk and Norwich	109	984	1,093	884	—
Taunton and Somerset	—	—	—	—	—
Bath United	74	1,077	1,151	640	365
Stockport (infirmary)	14	318	332	210	51
Gloucester "	83	507	590	234	192
Royal Isle of Wight (infirmary)	—	—	—	—	—
West Sussex, East Hants, and Chichester (infirmary)	—	—	—	—	—
Hull General (infirmary)	80	910	990	543	208
Cheltenham (infirmary)	75	514	589	315	124
Leicester "	118	1,273	1,391	343	715
Wolverhampton "	—	—	—	—	—
Northampton General "	122	1,082	1,204	640	331
Liverpool Royal "	148	2,885	3,033	2,181	391
Totals (*so far as returned*)	836	10,522	11,358	6,118	3,112

Table (II).—*Medical and Surgical*

Hospital.	Medical Wards.					
	Remaining 1st January, 1864.	Admitted during the Year.	Total.	Discharged.	Died.	*Remaining 1st January,* 1865.
	No.	No.	No.	No.	No.	No.
York County	—	—	—	—	—	—
Devonshire (Buxton, Derbyshire)	—	—	—	—	—	—
Norfolk and Norwich	—	—	—	—	—	—
Taunton and Somerset	—	—	—	—	—	—
Bath United	34	507	541	470	52	19
Stockport (infirmary)	—	—	—	—	—	—
Gloucester "	30	166	196	163	6	27
Royal Isle of Wight (infirmary)	—	—	—	—	—	—
West Sussex, East Hants, and Chichester (infirmary)	—	—	—	—	—	—
Hull General (infirmary)	20	395	415	344	26	45
Cheltenham (infirmary)	36	204	240	195	11	34
Leicester "	—	—	—	—	—	—
Wolverhampton "	—	—	—	—	—	—
Northampton General "	—	—	—	—	—	—
Liverpool Royal "	49	1,146	1,195	1,021	90	84
Totals (*so far as returned*)	169	2,418	2,587	2,193	185	209

HOSPITALS, 1864.

of Sex; nor of Medical or Surgical Cases.)

Unrelieved.	Discharged for Special Reasons.	Died.	*Remaining 1st January,* 1865.	Brought in Dead.	Hospital.
No.	No.	No.	No.	No.	
—	—	—	—	—	York County
96	10	1	15	—	Devonshire (Buxton, Derbyshire)
—	65	52	92	—	Norfolk and Norwich
—	—	—	—	—	Taunton and Somerset
—	—	90	56	—	Bath United
—	—	30	27	—	Stockport (infirmary)
8	70	26	60	—	Gloucester "
—	—	—	—	—	Royal Isle of Wight (infirmary)
—	—	—	—	—	West Sussex, East Hants, and Chichester (infirmary)
44	18	58	119	—	Hull General (infirmary)
4	49	26	71	—	Cheltenham (infirmary)
13	65	48	207	—	Leicester "
—	—	—	—	—	Wolverhampton "
10	69	50	104	—	Northampton General "
—	58	169	234	—	Liverpool Royal "
175	404	550	985	—	Totals (*so far as returned*)

Cases, without distinction of Sex.

Surgical Wards.						Hospital.
Remaining 1st January, 1864.	Admitted during the Year.	Total.	Discharged.	Died.	*Remaining 1st January,* 1865.	
No.	No.	No.	No.	No.	No.	
—	—	—	—	—	—	York County
—	—	—	—	—	—	Devonshire (Buxton, Derbyshire)
—	—	—	—	—	—	Norfolk and Norwich
—	—	—	—	—	—	Taunton and Somerset
40	570	610	535	38	37	Bath United
—	—	—	—	—	—	Stockport (infirmary)
53	341	394	341	20	33	Gloucester "
—	—	—	—	—	—	Royal Isle of Wight (infirmary)
—	—	—	—	—	—	West Sussex, East Hants, and Chichester (infirmary)
60	515	575	469	32	74	Hull General (infirmary)
39	310	349	297	15	37	Cheltenham (infirmary)
—	—	—	—	—	—	Leicester "
—	—	—	—	—	—	Wolverhampton "
—	—	—	—	—	—	Northampton General "
99	1,739	1,838	1,609	79	150	Liverpool Royal "
291	3,475	3,766	3,251	184	331	Totals (*so far as returned*)

Table (III).—*Average Number of Patients and Mean Residence.*

Hospital.	All Cases.				Medical Cases.				Surgical Cases.			
	Average Number Resident.			Mean Residence.	Average Number Resident.			Mean Residence.	Average Number Resident.			Mean Residence.
	Males.	Females.	Total.		Males.	Females.	Total.		Males.	Females.	Total.	
	No.	No.	No.	Days.	No.	No.	No.	Days.	No.	No.	No.	Days.
York County	—	—	—	—	—	—	—	—	—	—	—	—
Devonshire (Buxton, Derbyshire)	—	—	63	23	—	—	—	—	—	—	—	—
Norfolk and Norwich	—	—	125	45	—	—	—	—	—	—	—	—
Taunton and Somerset	—	—	—	—	—	—	—	—	—	—	—	—
Bath United	—	—	78	—	—	—	—	—	—	—	—	—
Stockport (infirmary)	—	—	—	—	—	—	—	—	—	—	—	—
Gloucester „	47	22	—	46	14	9	—	46	34	13	—	46
Royal Isle of Wight (infirmary)	—	—	—	—	—	—	—	—	—	—	—	—
West Sussex, East Hants, and Chichester (infirmary)	—	—	—	—	—	—	—	—	—	—	—	—
Hull General „	59	25	84	32	18	10	28	25	41	15	56	39
Cheltenham (infirmary)	29	31	60	38	10	15	25	38	19	16	35	31
Leicester „	—	—	—	35	—	—	—	—	—	—	—	—
Wolverhampton „	—	—	—	—	—	—	—	—	—	—	—	—
Northampton General	—	—	117	39	—	—	—	—	—	—	—	—
Liverpool Royal	—	—	218	—	—	—	—	—	—	—	—	—
Totals (*so far as returned*)	135	78	745	Average 36	42	34	53	Average 36	94	44	91	Average 39

Table (IV).—*Rate of Mortality.*

Hospital.	All Cases.			Medical Cases.			Surgical Cases.		
	Males.	Females.	Rate of Mortality.	Males.	Females.	Rate of Mortality.	Males.	Females.	Rate of Mortality.
	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.
York County	—	—	—	—	—	—	—	—	—
Devonshire (Buxton, Derbyshire)	—	—	·1	—	—	—	—	—	—
Norfolk and Norwich	—	—	—	—	—	—	—	—	—
Taunton and Somerset	—	—	—	—	—	—	—	—	—
Bath United	—	—	—	—	—	—	—	—	—
Stockport (infirmary)	—	—	10·5	—	—	—	—	—	—
Gloucester „	5·2	2·1	4·4	2·6	8·7	3·0	6·5	0·9	5·3
Royal Isle of Wight (infirmary)	—	—	—	—	—	—	—	—	—
West Sussex, East Hants, and Chichester (infirmary)	—	—	—	—	—	—	—	—	—
Hull General (infirmary)	7·2	4·2	6·6	9·5	2·4	7·0	6·4	6·0	6·3
Cheltenham (infirmary)	4·2	4·6	4·4	1·0	7·2	5·0	5·8	2·0	4·2
Leicester „	—	—	3·7	—	—	—	—	—	—
Wolverhampton „	—	—	—	—	—	—	—	—	—
Northampton General „	4·7	4·5	4·6	—	—	—	—	—	—
Liverpool Royal „	—	—	—	—	—	—	—	—	—
Average (*so far as returned*)	5·3	3·8	4·9	4·4	4·4	5·0	6·2	3·0	5·3

⁂ *Table* (IV).—See note to Table IV, *ante*.

Table (V).—*Admissions and Deaths in General and Special Wards.*

Hospital.	General Wards. (Medical and Surgical.)			Special Wards.		General and Special Wards.		
	Admitted.	Died.	Rate of Mortality.	Admitted.	Died.	Admitted.	Died.	Rate of Mortality
	No.	No.	Per cnt.	No.	No.	No.	No.	Per cnt.
York County	—	—	—	—	—	—	—	—
Devonshire (Buxton, Derbyshire)	985	1	·10	Nil	Nil	985	1	·10
Norfolk and Norwich	—	—	—	—	—	—	—	—
Taunton and Somerset	—	—	—	—	—	—	—	—
Bath United	1,151	90	7·82	—	—	1,151	90	7·82
Stockport (infirmary)	332	30	9·04	15	—	347	30	8·64
Gloucester ,,	590	26	4·40	Nil	Nil	590	26	4·41
Royal Isle of Wight (infirmary)	—	—	—	—	—	—	—	—
West Sussex, East Hants, and Chichester (infirmary)	—	—	—	—	—	—	—	—
Hull General (infirmary)	—	—	—	—	—	—	—	—
Cheltenham (infirmary)	589	26	4·41	None	None	589	26	4·41
Leicester ,,	—	—	—	—	—	—	—	—
Wolverhampton ,,	—	—	—	—	—	—	—	—
Northampton General ,,	1,082	50	4·62	—	—	1,082	50	6·62
Liverpool Royal ,,	—	—	—	—	—	—	—	—
Totals (*so far as returned*)	4,729	223	Average 5·07	15	—	4,744	223	Average 5·00

Additional Table.—*Rate of Mortality in the General Wards for the Years* 1862, 1863, *and* 1864.

Hospital.	1862.	1863.	1864.
	Per cnt.	Per cnt.	Per cnt.
York County	6·6	3·4	—
Devonshire (Buxton, Derbyshire)	·1	·2	·1
Norfolk and Norwich	4·7	4·5	5·2
Taunton and Somerset	2·2	—	—
Bath United	—	—	8·2
Stockport (infirmary)	8·3	10·3	10·3
Gloucester ,,	5·1	3·8	4·9
Royal Isle of Wight (infirmary)	5·3	—	—
West Sussex, East Hants, and Chichester (infirmary)	6·3	—	—
Hull General (infirmary)	7·1	—	6·7
Cheltenham (infirmary)	2·8	3·6	5·0
Leicester ,,	6·2	—	4·1
Wolverhampton ,,	9·8	—	—
Northampton General (infirmary)	—	—	4·5
Liverpool Royal (infirmary)	—	—	6·0
Average (*so far as returned*)	5·3	4·3	5·5

⁂ *Additional Table.*—The rates of mortality in this table have been calculated afresh from the data supplied by the several hospitals.

Note.—In all these tables the blanks (—) must be understood to imply an absence of information.

MISCELLANEA.

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I.—*General Results of the Commercial and Financial History of* 1865.

This history of British commerce for the past year continues the series of instructive narratives published in the *Economist*. The previous account, taken from the same paper, and which describes in outline the transactions of 1864, was re-printed at pp. 170 *et seq.* in the Society's *Journal* for 1865.

Similar narratives for earlier years, written for this *Journal* by Mr. Newmarch, will be found in vols. xxii, xxiii, and xxiv.

"The commercial and financial history of 1865 embraces six principal topics, and these are—(1) the close of the American Civil War—(2) the decline and rise of the price of cotton—(3) the decline and rise in the rate of discount—(4) the revival and enlarged demand for exports to the United States—(5) the further experience of the operation of the new banks, and finance and limited liability companies—and (6) the general prosperity of the trade and industry of the country, and the tendency on all sides to an advance in the rate of wages.

"The news of the final Confederate defeat arrived in April, and in the course of a few weeks it became plain that a large, probably the largest, party in this country had been from a variety of causes led to form most erroneous opinions regarding the sources of the South. It was seen that the success of Sherman's march in November and December (1864) ought to have been received as decisive evidence that the Southern armies were so exhausted, and the Southern people so impoverished, that they were no longer able to keep the field for any length of time in force. Considering that the collapse of April followed so closely on the conferences at Fortress Monroe in February, it must always remain a mystery how the Confederate leaders could be so infatuated as to reject the opportunity of securing honourable terms of capitulation at a time when they must have known that in a military sense their chance of victory in the field was utterly hopeless. The assassination of President

Lincoln occurred on the 14th April, and of course added to the perplexities of the crisis. Comparing the prices of cotton at Liverpool on 30th December (1864) and the following 17th April, there was a fall of about 50 per cent., that is to say, middling Orleans fell from 27*d.* to 13½*d.* per pound. In October these prices had risen to 24½*d.*, and on 31st December (1865) stood at 21*d.* The range of variation, therefore, was of an extreme character.

"The events of the three or four months following April enabled public opinion on both sides of the Atlantic gradually to arrive at conclusions concerning the durability of peace in the United States, and concerning the character and policy of Mr. Johnson, the new President. At length it became certain that the war was really at an end, and that the President, notwithstanding many doubtful antecedents, had formed sagacious views for the reconstruction of the Union, and had firmness sufficient to enforce his own policy without regard to party. These facts being accepted, there was a rush on all sides to import goods from Europe to supply the necessities of the country. The American markets were bare, the warehouses empty, prices rising, and demand vehement. Agents arrived in England, who bought not by bales and cargoes, but who took at a stroke the contents of entire warehouses. The effects were of course rapid and striking. In September grey shirtings rose from 11*s.* to 16*s.*, and raw cotton from 18*d.* to 24*d.* In a note at foot we give from the Circular of Messrs. Guion and Co. (Liverpool) a statement which shows in figures the extent and suddenness of the export trade which sprung up. The great rise in the price of cotton of course led to large and urgent orders to India and elsewhere for further and early supplies, and such orders of necessity implied considerable remittance of treasure, and that treasure, chiefly in the form of silver, to be purchased on the continent by means of gold sent there from this country.

I.—*Exports from Liverpool of British Manufactures of Cotton, Wool, Silk, and Flax to New York, Boston, Philadelphia, and New Orleans, in Packages. (Guion and Co.'s Circular.)*

	1860.	1861.	1862.	1863.	1864.	1865.
January	23,449	17,436	14,381	12,622	16,669	6,735
February	15,762	7,324	12,742	12,634	16,125	9,921
March	14,153	10,699	9,228	13,078	13,054	10,362
April	11,038	2,595	6,861	10,200	9,595	6,716
May	15,189	2,627	7,286	5,925	11,857	7,423
June	24,078	1,445	8,369	5,747	13,269	10,969
First six months	103,669	42,126	58,867	60,206	80,569	52,126
July	24,136	2,740	15,237	11,535	10,586	15,708
August	19,975	4,105	13,206	9,868	5,941	18,850
September	13,641	4,451	11,176	12,468	4,361	20,481
October	14,830	6,990	10,950	11,520	4,234	24,855
November	17,508	6,602	8,496	13,520	3,602	25,812
December	20,992	5,904	10,651	15,264	5,414	26,098
Second six months	111,172	30,792	69,716	74,075	34,138	131,804
Annual totals	214,841	72,918	128,583	134,281	114,707	183,930

II.—*Exports from Liverpool of Foreign Silks, Dress Stuffs, Laces and Embroidery, to New York, Boston, Philadelphia, and New Orleans, in Packages.*

	1860.	1861.	1862.	1863.	1864.	1865.
January	6,029	5,110	1,175	2,760	5,662	4,527
February	3,392	2,524	2,722	2,931	6,629	3,345
March	2,212	1,245	1,534	952	4,688	3,545
April	1,377	1,120	2,017	922	4,742	2,646
May	1,460	1,929	2,505	1,384	6,338	2,428
June	3,666	1,042	2,841	2,911	7,031	4,755
First six months	18,136	12,970	12,794	11,860	35,090	21,246
July	3,813	1,893	5,485	3,304	5,430	8,101
August	4,030	2,200	3,055	3,708	1,409	8,820
September	2,098	935	2,576	3,834	1,305	6,921
October	2,068	1,328	1,677	3,729	1,759	13,438
November	3,052	1,549	2,068	2,563	1,036	12,952
December	5,763	2,111	2,348	7,097	1,967	12,103
Second six months	20,824	10,016	17,209	24,235	12,906	62,335
Annual totals	38,960	22,986	30,003	36,095	47,996	83,581

"The vicissitudes of 1865, therefore, admit of an easy epitome. The three first months of the year were occupied by a gradual recovery from the panic of the preceding autumn, and by the occurrence of rapidly falling prices in the cotton market under the apprehension of speedy peace in America and large supplies of Southern cotton. The summer was an intermediate period of uncertainty. In September that uncertainty ceased, and for the rest of the year whatever difficulties arose were occasioned by the desire to bring forward exports on the one hand, and hasten the arrival of raw cotton on the other; and, as we have said, hastening the arrival of raw cotton meant the remittance of treasure—some demand on the Bank of England—a considerable drain of bullion, and frequent and severe variations of the rate of discount.

"There were *sixteen* changes in the rate of discount at the Bank of England (see details in Appendix.*) The most remarkable of these changes were the four alterations of the rate in the ten days, from the 27th September to 7th October, by which the quotation was carried from 4½ to 7 per cent.

"The following Table (III) shows the course of the exports of treasure to the East in the several months of 1865. The slackness of these exports in the summer and their magnitude in the autumn will attract attention:—

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* For want of space the Appendix has been omitted; but for the convenience of reference the letters by which its different sections are marked in the original have been retained. The Appendix will be found in the *Supplement* to the *Economist* of the 10th March.

III.—*Export of Gold and Silver in* 1865, *to Egypt and the East.*
(*From Mr. Low's Circular.*)

Months.	Gold.	Silver.	Total.
1865.	£	£	£
January	51,400	396,400	447,800
February	31,300	223,500	254,800
March	11,400	264,300	275,700
April	4.900	48,400	53,300
May	21,100	20,300	41,400
June	25,700	21,400	47,100
	145,800	974,300	1,120,100
July	33,700	146,600	180,300
August	18,100	340,000	358,100
September	36,100	197,000	233,100
October	101,800	450,000	551,800
November	73,200	861,000	934,200
December	72,800	425,700	498,500
	481,500	3,394,600	3,876,100

"In addition to the preceding figures, we may give the following from the circular of Mr. F. M. Page (London), as showing the export of gold and silver coin and bullion to the East from this country, and *viâ* Marseilles by the French line of steamers, the Messageries Imperial:—

Conveyance.	1865.	1864.
	£	£
Peninsula and Oriental steamers from Marseilles	4,074,000	7,777,000
Peninsula and Oriental steamers from Gibraltar, Malta, and Suez	514,000	553,000
	4,588,000	8,330,000
Messageries Imperial from Marseilles	5,167,500	7,770,000
	9,755,000	16,100,000
Peninsula and Oriental steamers from Southampton	4,177,000	8,217,000
	13,933,000	24,317,000

"In order to show the degree in which the exports of treasure month by month are met by the imports in the same months, an analysis is given in Appendix (M) of the figures in the Board of Trade Returns for the two years 1864-65. An inspection of that Appendix is invited. But it will be convenient to reduce the details it contains into a smaller compass, and hence the preparation of the two following abstracts (IV and V).

"The first of these compares the exports and imports of treasure in periods of three months, and the result is that in each of the eight trimestrial periods the balance is more or less on the side of the imports:—

IV.—*United Kingdom,* 1864-65. *Imports and Exports of Gold and Silver in Periods of Three Months, being Abstract of Details given in Appendix* (M).

[0,000's omitted, thus 4,09 = 4,090,000*l.*]

Three Months, 1864-65.	Imports.			Exports.			Imports.	
	Gold.	Silver.	Total.	Gold.	Silver.	Total.	More.	Less.
1864.	£	£	£	£	£	£	£	£
January—March	4,09	3,63	7,72	3,80	3,50	7,30	,42	—
April—June	5,62	1,79	7,41	3,77	1,64	5,41	2,00	—
July—September	3,33	3,60	6,93	2,71	3,05	5,76	1,17	—
October—December	4,31	1,76	6,07	2,98	1,76	4,74	1,33	—
	17,35	10,78	28,13	13,26	9,95	23,21	4,50	—
1865.								
January—March	2,55	1,76	4,31	1,46	1,51	2,97	1,34	—
April—June	4,56	1,65	6,21	2,06	1,44	3,50	2,71	—
July—September	2,44	1,34	3,78	1,94	1,45	3,39	,39	—
October—December	4,84	2,20	7,04	3,01	2,28	5,29	1,75	—
	14,39	6,95	21,34	8,47	6,68	15,15	6,19	—

"The next Table (V) still further epitomises the details in Appendix (M) by exhibiting month by month the difference between the *total* imports and exports of gold and silver. These differences are comparatively small and nearly always in favour of imports. The *Gazette* returns of bullion, from which these tables are made up, are not, however, to be used without caution. It is the firm and probably well-founded belief of those who have had most to do with the subject, and the best means of examining it, that the great Exchange dealers can and do export and import large sums when they please without informing the Custom House officers.

V.—*United Kingdom. Gold and Silver. Monthly Differences between Total Imports and Exports being Abstract of Details in Appendix* (M).

Months.	1865.		1864.	
	Imports. More.	Exports. More.	Imports. More.	Exports. More.
	£	£	£	£
January	190,	—	—	350,
February	424,	—	—	291,
March	823,	—	1,056,	—
April	287,	—	—	376,
May	1,205,	—	1,587,	—
June	1,202,	—	810,	—
	4,131,	—	3,453,	1,017,
July	—	845,	—	363,
August	628,	—	1,563,	—
September	101,	—	78,	—
October	1,274,	—	1,015,	—
November	1,083,	—	325,	—
December	—	718,	—	100,
	7,217,	1,063,	6,434,	1,480,

"The Cotton Famine may be considered to have terminated with the later months of 1865, or indeed earlier. The Relief Committee suspended their labours in June (1865). The best account which has yet appeared of the experience acquired during the four years of suffering is contained in the recent volume by Dr. Watts, entitled 'Lancashire and the Cotton Famine'* (Simpkin). Here however we are concerned not with the social but with the commercial consequences of the crisis. From the elaborate cotton circular, given at a subsequent p. (19),† we obtain the following results as regards the cost in each year, 1856-65, of the raw cotton imported, re-exported, and consumed.

VI.—*United Kingdom. Estimate of Value of Raw Cotton Imported, Re-Exported, and Consumed,* 1856-65. (*Per Circular of Ellison and Haywood, Liverpool.*)

Years.	Imported.	Re-exported.	Consumed.	Average Price per Pound.
	Mln. £	Mln. £	Mln. £	d.
1865	63,2	17,1	47,2	15¾
'64	82,2	22,1	52,4	22
'63	58,0	21,6	40,7	20⅛
'62	31,2	12,4	26,7	14
1861	38,1	7,9	32,2	7⅜
'60	36,6	5,5	28,9	6⅛
'59	32,2	4,1	27,6	6⅓
'58	27,2	3,3	24,8	6⅜
'57	28,6	3,5	24,8	7⅛
'56	26,0	3,3	22,7	6⅛

"The average price of 1865 is one-third below that of 1864, but is about double the average price of 1861.

"The four countries or regions which have been most profoundly affected by the demand for cotton at high prices, have been India, China, Egypt, and Brazil, and if to these four regions we add the United States, we shall have the group of countries our trade with which during the last five years has undergone a sweeping revolution. In Appendix (I) we have presented statements which show the variations which have taken place in the trade between the United Kingdom and each of these five regions, during the five years 1860-64, and in the following Table (VII), a summary is given of the chief results.

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* The title-page gives the name of Dr. John Watts' work in rather more significant terms. "The Facts of the Cotton Famine;" by this title the book is best known.—(Ed. *S. J.*)

† See *Economist.*

VII.—*Five Years* 1860-64. *Imports and Exports of Merchandise as regards the Principal Cotton Regions, viz., India, China, Brazil, and Egypt, and also as regards the United States, being Abstract of Details in Appendix* (I).

[00,000's omitted, thus 94,6 = 94,600,000*l.*]

Years.	Imports from			Exports to			Total Imports more than Exports.
	India, China, Brazil, Egypt.	United States.	All Countries.	India, China, Brazil, Egypt.	United States.	All Countries.	
	£	£	£	£	£	£	£
1864....	94,6	17,9	274,9	38,3	20,1	212,6	62,3
'63....	83,6	19,6	248,9	32,7	19,7	196,9	52,0
'62 ...	62,9	27,7	225,7	24,8	19,1	166,2	59,5
'61....	42,1	49,4	217,5	29,1	11,0	159,6	57,9
'60....	37,0	44,7	210,5	30,3	22,9	164,5	46,0

"The peculiarity of these figures is the amazing increase they exhibit of nearly 60 millions sterling in the *imports* from India, China, Brazil, and Egypt, against an increased export of no more than 8 millions sterling. For five years we have been laying widely and deeply the foundations of a vast future trade with these fertile tropical countries. We found the people who inhabit them rude, ignorant, without enterprise and with few wants, but the golden shower which has descended so plentifully upon them since 1860 has already had some effect, and it is quite certain that the increase of 8 millions in the exports is only the beginning of a demand which will presently reduce the trade to the sound condition of an exchange of merchandise representing values not very widely different.

"Messrs. Ellison and Haywood have been at considerable pains to estimate as nearly as may be possible the effects of the four years' cotton famine upon the masters and men engaged in the cotton trade, not forgetting to take into account the large gains which accrued to the manufacturers in 1862 and 1863 in consequence of the largely advanced prices at which they were able to sell the enormous quantities of goods produced in 1860 and 1861. It is certain that in many cases the first operation of the cotton famine was to save from bankruptcy many firms who had carried production and shipments to excessive lengths during the two years just named. The following is the passage from Messrs. Ellisons' circular:—

"'After a careful analysis of the figures contained in the tables, we estimate the losses of the trade during the four years, 1862-65, as follows:—

	Millions Sterling.
Loss of interest of capital and profits to employers	37 to 40
" wages to operatives, &c.	28 " 30
Total	65 to 70

"'About three-fifths of the loss in wages fell upon operatives engaged in spinning and weaving. Of the total amount perhaps about one-fourth was recovered in the form of relief, and remuneration received for permanent or occasional employment in other branches of industry. The total sum distributed in charity alone amounted to about 3,000,000*l.* A good portion of the employing class obtained a set-off in enhanced prices gained for the heavy stocks of yarns and goods held at the close of 1861. Fortunate speculation during the course of the famine was a prolific source of assistance to many, though, as regards the trade at large, it is probable that these profits were counterbalanced by the heavy losses of others. Spinners gained about 360,000*l.* upon the stock of raw cotton held at the close of 1860, and this sum we have deducted from the cost of cotton used in 1861. Very little beyond the cost price was obtained for the stock they held at the end of 1861, as there was only a slight advance in values during the first six months of 1862.

"'Assuming that of the total stock of cotton in the ports at the close of 1861 (279,000,000 lbs.) two-thirds, or 186,000,000 lbs. were sold in 1862 at an advance of 6*d.* per lb., and one-third, or 93,000,000 lbs., in 1863, at an advance of 12*d.* per lb.—the total amount of profit realised was about 9,300,000*l.* A similar calculation for the yarns and goods on hand at the same date (293,000,000 lbs.) shows a total gain of 9,800,000*l.*, making the aggregate profit on the raw and manufactured articles 19,100,000*l.* We have no means of estimating the gains and losses of importers during the past four years. Many shipments have, of course, shown a very handsome margin; but on the other hand, a vast number have ruined their consignees. The fluctuations in prices have been so frequent and so great, that it would not be easy to put the result of the four years' transactions into figures, but if such an account could be made up, we should not be surprised to find the balance on the wrong side.'

"To understand how it has happened that we have sustained with such comparative ease a calamity which has inflicted a loss of 70 millions sterling on one group of industries is not a thing of easy accomplishment. But if we ascertain for the last twenty years or more, the steady progress made by our population in obtaining year by year a larger share of conveniences and luxuries by means of a commerce carried on in the face of vigorous competition by all the world, we shall have before us evidence in a precise shape of the operations of perhaps the most important of the commercial causes of our stability and progress—and the following figures of the consumption per head of imported articles by the people of the United Kingdom will furnish the kind of evidence referred to.

VIII.—*United Kingdom. Consumption of Leading Articles per Head of the Population*, 1843-65. (*From Circular of Francis Reid and Co., Liverpool.*) *See Appendix* (K).

Articles.	1865.	1860.	1856.	1851.	1846.	1843.
Sugar .... lbs.	41·1	34·6	29·7	26·7	20·8	16·5
Tea	3·3	2·7	2·2	1·9	1·6	1·5
Rice	3·6	5·9	5·6	1·6	1·7	1·0
Tobacco	1·4	1·2	1·1	1·0	0·9	0·8
Wine ....gals.	0·4	0·2	0·2	0·2	0·2	0·2
Cotton .... lbs.	21·0	39·4	31·1	23·4	14·2	23·2
Foreign ....wool	4·2	4·0	3·2	2·5	2·3	1·7
Tallow	5·1	5·5	4·1	4·4	4·7	4·8
	s.	*s.*	*s.*	*s.*	*s.*	*s.*
Total imports	137	118	122	—	—	—
" exports	108	94	82	54	41	38

Note.—This table may be read thus: In 1865 the consumption of sugar *per head* of the population in that year was 41·1 lbs., the total imports were 137*s.*, and the total exports 108*s.* per head.

"The commercial failures in 1865 were not numerous, nor in the aggregate of large amount, although some ten of the cases in London and the country were individually of importance and magnitude. The failure in March of the old private bank of Attwood, Spooner, and Co., at Birmingham, was a catastrophe arising from the slow operation of causes extending backward over several years.

"Nearly all the markets for leading articles of colonial and foreign produce advanced considerably in 1865. In tea, probably, the most remarkable improvement was effected. The following Table (IX.) will show the *percentage* variations at 1st January, 1866, as compared with 1st January, 1864, and two preceding dates—one of those dates being 1st July, 1857, that is to say, the period at which prices were most inflated just previous to the panic of the autumn of 1857.

IX.—*Wholesale Prices in London. Comparison of* 1*st January*, 1866, *with Three Former Dates, stating in Percentages the degree in which the Prices of* 1*st January*, 1866, *were Higher or Lower than the Prices prevailing at the Three Selected Dates. See Appendix* (L).

Articles.	Higher	Lower	Higher	Lower	Higher	Lower	Higher	Lower
	Than 1st January, 1865.		Than 1st January, 1864.		Than 1st January, 1861.		Than 1st July, 1857.	
	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.
Coffee	11	—	18	—	36	—	18	—
Sugar	10	—	—	15	—	8	—	41
Tea	30	—	14	—	—	7	—	15
Wheat	15	—	18	—	—	12	—	24
Butchers' meat	5	—	11	—	5	—	23	—
Indigo	8	—	1	—	—	—	4	—
Oils	10	—	8	—	2	—	—	—
Timber	—	10	—	16	—	13	—	15
Tallow	20	—	22	—	—	11	—	31
Leather	—	—	—	1	—	—	—	14
Copper	21	—	—	—	5	—	—	8
Iron	5	—	—	6	8	—	—	18
Lead	7	—	2	—	—	—	—	14
Tin	5	—	—	7	—	23	—	36
Total Note circulation in Great Britain	3	—	3	—	2	—	—	4

Note.—This table, deduced from the percentages in Appendix (L), may be read thus:—On 1st January, 1866, coffee was 11 per cent. higher than on 1st January, 1865; timber was 10 per cent. lower, &c.

The articles *raw cotton, silk, flax, hemp, wool,* and *tobacco* are omitted for the obvious reason that the war in America wholly deranged the former conditions of supply and demand. For the latter reason *copper* might have been omitted in consequence of the blockade of the Chilian ports by Spain at the close of 1865.

"The circulars quoted hereafter in this supplement are, with scarcely an exception, filled with congratulations on the prosperous results of the trade of 1865. The woollen, cotton, iron, linen, shipping, hardware, chemical, timber, and building trades have all been active and prosperous. Towards the latter part of the year the vast demand for the United States doubtless contributed largely to this result. The cessation of the civil war in America also removed a source of universal disquiet, and the severe crisis of the autumn of 1864 had in many cases reduced prices to a level below the point justified by supply and demand. Throughout the year there was a tendency to a rise of wages in most of the considerable trades. In many cases higher wages, say additions of 10 to 15 per cent., were actually acceded to, and the direction was almost universally in favour of the employed class.

"For the last two or three years building operations on a large scale have become characteristic, not merely of the largest towns, but of smaller towns, even of the third and fourth order. Business premises, warehouses, wharves, railway stations, hotels, offices, banks, and private edifices, in nearly every case of architectural pretension and merit, arose in every direction. In the City of London the price of eligible building land is estimated to have risen 50 or 60 per cent. since 1862.

"The experience of 1865 has not been favourable to a large proportion of the new banks, discount, finance, trading, and limited companies set up in 1863-64. The discount companies have generally failed to achieve success. Several of the new banks have encountered difficulties sufficiently formidable to obliterate from the share list the premiums once so conspicuous. The finance companies have followed much the same course, and the opening of 1866 finds the world again sober enough to admit that no great discoveries remain to be made in finance, and that large and profitable businesses are not to be created by the paragraphs of a prospectus. At the present time it is probable that 70 per cent. of the companies more or less completely started during the last three years are practically defunct. The shares in a large part of the remainder are unsaleable in the market, and in only a few cases is it possible to effect dealings at reasonable premiums. It is quite possible that at present we see almost the lowest point of the reaction from the fever of 1864, and that the want of fair appreciation is almost as remarkable now as was the readiness to over-appreciate before. The operation of calls made in rapid succession is always unfavourable upon share property. At the outset so many persons take more shares than they can provide for, that every call brings forward a new crop of sellers in a market where buyers are few, and to be found only among persons who know perfectly well the weakness and necessities of the opposite party. It is probable that 1866 may witness considerable recovery in the shares of those limited companies which are able to show solid evidence of their intrinsic solidity and progress."

This general review of the commercial history of 1865 is followed in the *Economist* by an Appendix containing important and compendious statistical tables, in which information relating to the different branches of our trade, manufacture, and finance is exhibited for a series of years, terminating with the last. The Appendix is arranged in nine divisions, each having several sub-divisions; the divisions are numbered and entitled—

I, Corn and Cattle Trades; II, Colonial and Tropical Produce; III, Wine Trade; IV, Raw Materials; V, Shipping and Freights; VI, Cotton Trade; VII, Linen Trade; VIII, Railway Traffic; and IX, English Money Market.—Ed. *S. J.*

II.—*The Mercantile Navy of the United Kingdom.*

A STATISTICAL account of the vessels employed in the merchant service of this country appeared in the *Manchester Guardian* of the 12th and the 26th of December last. The two articles, which embrace the ten years ended with 1863, and exhibit the statistics for the latter year in considerable detail, are here reprinted:—

I.

"As a great commercial and maritime nation, the growth of our mercantile navy is a topic of no little interest. In treating in these columns upon the British import and export trade, frequent occasion has been taken to show the very large increase which, during the last ten or twelve years, the carrying trade of this country has experienced. Now we desire to exhibit not the number of voyages to and fro, with their aggregate freights, but something about the ships themselves—the census of our merchant fleet, with certain of its more conspicuous incidents. The subject, of course, has no claim to novelty. It was discussed, with a special view, however, in the *Journal of the Statistical Society*, two years ago, by a gentleman connected, we believe, with the shipping business of the port of London. In 1810 the United Kingdom, with the Channel Islands, possessed 20,253 registered vessels, having an aggregate tonnage of 2,211,000. Down to 1840, the increase in the number was not very great, but in average size it was considerable. The mean size of each vessel in 1810 was 109 tons; in 1820, 110 tons; in 1830, 114 tons; in 1840, 123 tons. In 1850, the year immediately preceding the repeal of the Navigation Laws, the vessels numbered 25,138, the tonnage was 3,505,000, and the average capacity 139 tons.* In 1855 a new method was adopted of measuring ships; this, to the extent of 10 per cent., vitiates the comparison of the old with the new returns, according to Mr. Glover's estimate. A ship now measuring 100 tons would have been classed as of 110 tons burthen before 1854. We cannot find that the annual statements published by the Board of Trade, from which the subsequent statistics are taken, give any intimation of this material change in reckoning tonnage. The tables which follow are chiefly for the decade ended with 1863. The published accounts of the Board not being yet issued for 1864, what information is obtainable for that year will be incorporated in the remarks as we proceed.

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* *Statistical Journal*, vol. xxvi, pp. 1 and *seq.*

Number and Tonnage of Registered Vessels (Sailing and Steam) belonging to the United Kingdom and British Possessions on the 31*st December, during the Ten Years* 1854-63.

	Vessels.	Tonnage.
1854	36,348	5,116,000
'55........................	35,692	5,251,000
'56	36,012	5,212,000
'57........................	37,088	5,532,000
'58........................	37,751	5,610,000
1859	38,200	5,660,000
'60........................	38,501	5,711,000
'61	38,868	5,895,000
'62........................	39,427	6,041,000
'63........................	40,195	6,624,000

" The whole number of vessels, sailing and steam, wood and iron (exclusive of river steamers), registered throughout Her Majesty's dominions increased from 36,348 in 1854, to 40,195 in 1863, *i.e.* by 3,847, or 10·5 per cent. The increase of tonnage in the same interval, after correction for difference of measurement, was 2,170,000 tons, or 42·4 per cent. The average burthen on the adjusted measurement was 165 tons in 1863; hence, since 1810 the capacity has augmented more than *fifty* per cent. The tonnage during the decade has increased every year, very largely indeed between 1863 and 1862.

Crews of Registered Vessels, and Ratio of Tonnage per Head, on 31*st December*, 1854-63.

	Crews.	Ratio of Tonnage per Man.
1854........................	269,093	19·0
'55........................	261,194	20·1
'56........................	267,573	19·5
'57........................	287,353	19·3
'58	288,345	19·4
1859........................	291,431	19·4
'60........................	294,460	19·4
'61........................	299,861	19·7
'62........................	304,171	19·9
'63........................	326,366	20·3

" The falling off in the hands between 1854 and 1855 is probably due to the Russian war. From 1855 the crews have steadily increased—we have now 65,172 more men than we had then. During the first four years the proportion of hands to tonnage appears to have oscillated, latterly it has persistently, if not largely, swollen. In 1857 we reckoned one hand to 19·3 tons of burthen; now it is 20·3 tons; exactly one ton more per man.

" The next table shows what the empire has done to make up for its annual loss in the mercantile marine and otherwise to supply the increasing demands of British commerce.

Sailing and Steam Vessels Built and Registered in the United Kingdom, the Channel Islands, and British Possessions, in the Ten Years ended with 1863.

	Vessels.	Tonnage.
1854	1,582	390,000
'55	1,870	492,062
'56	1,876	423,596
'57	2,045	423,477
'58	1,673	312,388
1859	1,575	282,318
'60	1,722	318,828
'61	1,546	316,435
'62	1,571	358,820
'63	1,949	596,676

It is evident here that a great impetus was given to shipbuilding in the earlier years; that it slackened greatly in 1858 and 1859; that in 1862 it looked better; but that 1863 was, in activity of production, the most marked in the decade—the tonnage of that year more than doubled the figures of 1859. The weekly produce of our shipbuilding yards is disclosed by the next table.

The Weekly Rate of Shipbuilding in the United Kingdom, the Channel Islands, and British Possessions, in the Ten Years ended with 1863.

	Vessels.	Tonnage.
1854	30·4	7,500
'55	36·0	9,463
'56	36·1	8,146
'57	39·3	8,144
'58	32·2	6,007
1859	30·3	5,429
'60	33·1	6,131
'61	29·7	6,085
'62	30·2	6,900
'63	37·5	11,475

The last year on the list of course stands highest in ratio of activity. The return for 1863 certainly presents, under the guise of a few figures, a striking picture of this kingdom's power in naval architecture. More than six ships were turned off the stocks daily (6·25 per working day).

"The next statement which discriminates the number of sailing from steam vessels is, unlike the four preceding ones, which include the colonies, limited to the United Kingdom.

Sailing and Steam Vessels Built and Registered in the United Kingdom in the Ten Years ended with 1863.

		Vessels.	Tonnage.
1854	Sailing	628	132,687
	Steam	174	64,255
1855	Sailing	863	242,182
	Steam	233	81,018
1856	Sailing	921	187,005
	Steam	229	57,573
1857	Sailing	1,050	197,554
	Steam	228	52,918
1858	Sailing	847	154,930
	Steam	153	53,150
1859	Sailing	789	147,967
	Steam	150	38,003
1860	Sailing	818	158,172
	Steam	198	53,796
1861	Sailing	774	129,970
	Steam	201	70,869
1862	Sailing	827	164,061
	Steam	221	77,338
1863	Sailing	881	253,036
	Steam	279	107,951

The proportion of steam to sailing tonnage turned afloat varied considerably, comparing one year of the decade with another; sometimes it constituted *one-third*, or rather more, of the whole quantity; sometimes *one-fourth*. However large the growth may be of either class, the statistics prove that the sailing vessels quite hold their own against their rivals.

" The yearly losses from wrecks and old age are summarised in the next table.

Sailing and Steam Vessels Wrecked and Broken Up in the United Kingdom in the Ten Years ended with December, 1863.

		Vessels.	Tonnage.	Total Tonnage.
1854	Wrecked	738	168,843	178,818
	Broken up	74	9,975	
1855	Wrecked	486	95,817	103,846
	Broken up	114	8,029	
1856	Wrecked	754	195,725	205,224
	Broken up	110	9,499	
1857	Wrecked	662	167,688	166,705
	Broken up	79	9,022	
1858	Wrecked	566	187,166	142,668
	Broken up	59	5,502	
1859	Wrecked	671	170,487	179,262
	Broken up	82	8,775	
1860	Wrecked	744	172,784	185,452
	Broken up	75	12,668	
1861	Wrecked	663	151,236	158,677
	Broken up	72	7,441	
1862	Wrecked	674	172,236	180,336
	Broken up	56	8,100	
1863	Wrecked	912	187,048	202,086
	Broken up	158	15,038	

"The table shows but little uniformity of results. We see our annual losses from both causes vary, in round numbers, from 100,000 to 200,000 tons. The decay of age, however, appears to operate, as might be anticipated, more regularly than accidents by flood. We may estimate that every year there is about 150,000 tons of new shipping required to make up for 'wear and tear.' In recent years the official accounts have recorded the number of vessels which have been taken off the register by becoming the property of foreigners. The return begins with 1856. There was a return anterior to the date of the ships 'transferred' in the United Kingdom, but the Custom House authorities seem to have had misgivings about its accuracy. In 1856 the number of vessels (sailing and steam) sold to foreigners and taken off the register was 149; in 1857 it was 90. Subsequently the account is more detailed.

Number of Vessels belonging to the United Kingdom Sold to Foreigners during the Six Years ended with 1863.

	Vessels.	Tonnage.	Total Tonnage.
1858 Sailing	49	16,880	28,765
1858 *Steam*	36	11,885	
1859 Sailing	29	9,253	30,193
1859 *Steam*	52	20,940	
1860 Sailing	39	12,230	28,951
1860 *Steam*	49	15,721	
1861 Sailing	48	17,599	25,182
1861 *Steam*	31	7,583	
1862 Sailing	51	14,601	35,373
1862 *Steam*	51	20,772	
1863 Sailing	96	33,179	54,798
1863 *Steam*	85	31,619	

"These are vessels originally built for British owners, but which, by sale have passed to the possession of foreigners.

"Latterly, the changes in our merchant navy are posted up in the quarto blue books very compendiously. We have synoptically the evolution of the shipping census thus represented for one year:—

	Total.	
	Vessels.	Tons.
Upon the register on the 31st December, 1862	27,525	4,860,191
Added to the register during 1863—		
New vessels, British built	1,163	364,724
" colonial "	51	38,809
Foreign built	300	223,223
Vessels transferred from the colonies to the United Kingdom	156	70,868
Total added	1,670	697,624
Deducted from the register during 1863—		
Vessels wrecked	912	187,048
" broken up	158	15,038
" sold to foreigners	181	64,798
" transferred to the colonies	48	11,766
" sold and registered at ports of the United Kingdom, and registers cancelled but not re-registered prior to the 1st January, 1864	146	27,408
Total deducted	1,445	306,058
Actual addition in 1863	225	391,566
Upon the register on the 31st December, 1863	27,750	5,251,757

"The increment of growth is here measured by a gain in vessels of 15⅛ per cent. in additions beyond the deductions, and in the tonnage of 128 per cent.

II.

"In the first part of this article the statistics, which come down to the end of 1863, were abstracted from the annual volumes of the trade and navigation returns. For information of a later date we must have recourse to a parliamentary paper of last session,* which supplies a variety of particulars of our shipping trade for 1864.

Sailing Vessels Registered in the Ports of the United Kingdom and the Colonies on 31st December, 1864.

		Vessels.	Tonnage.	Total Tonnage.
England	Small	7,290	229,577	4,045,003
	Large	12,916	3,815,426	
Scotland	Small	1,073	32,771	608,549
	Large	1,953	575,778	
Ireland	Small	969	28,434	193,751
	Large	1,054	165,317	
Isle of Man	Small	277	6,848	10,895
	Large	48	4,047	
Channel Islands	Small	208	5,726	72,021
	Large	354	66,295	
British possessions, &c.	Small	5,717	156,526	1,388,541
	Large	6,012	1,232,015	

Note.—The small vessels are of less than 50 tons burthen; the large ones are of 50 tons or more.

Of the registered tonnage, which for sailing vessels amounted to 6,319,000 in 1864, the proportion per cent. belonging severally to the ports of the United Kingdom and colonies stands thus:—

	Tonnage of Sailing Vessels.
England	64·0 per cent.
Scotland	9·6 "
Ireland	3·1 "
Isle of Man and Channel Islands	1·3 "
British possessions	22·0 "
	100·0

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* Commons Paper, No. 331, Shipping, 1865.

The proportion of timber-built to iron ships will be stated further on. The steamers for the same year are tabulated thus:—

Steam Vessels Registered in the Ports of the United Kingdom and the Colonies on 31st December, 1864.

		Vessels.	Tonnage.	Total Tonnage.
England	Small	772	17,973	528,449
	Large	1,135	510,476	
Scotland	Small	106	2,709	115,268
	Large	295	112,559	
Ireland	Small	47	1,263	51,858
	Large	127	50,595	
Isle of Man	Small	—	—	1,509
	Large	5	1,509	
Channel Islands	Small	1	16	197
	Large	2	181	
British possessions	Small	112	3,224	70,047
	Large	325	66,823	

The steam tonnage amounted to 767,000. The proportion per cent. was thus distributed throughout the ports of the empire:—

	Tonnage of Steam Vessels.
England	69·0 per cent.
Scotland	15·0 "
Ireland	6·7 "
Isle of Man and Channel Islands	0·2 "
British possessions	9·1 "
	100·0

Or, making the calculation upon both sailing vessels and steamers, the ratios in respect to the separate divisions of the empire are expressed by the subjoined figures:—

	Total Tonnage.	Ratio of Total Tonnage.
		Per cent.
England	4,574,000	64·6
Scotland	724,000	10·2
Ireland	245,000	3·5
Isle of Man and Channel Islands	84,000	1·1
British possessions	1,459,000	20·6
Total of sailing and steam vessels	7,086,000	100·0

The low position which Ireland occupies on the scale of maritime enterprise is well shown by these figures. Her tonnage is but one-third of that belonging to Scotland—245,000 to 724,000; with a population of nearly twice the amount of the kingdom beyond the Tweed. The Channel Islands and the Isle of Man can, with their small populations, muster steam and sailing tonnage which is equal to one-third of that ascribed to Ireland, with her six millions of inhabitants!

"It was shown last week how large the increase, both in vessels and burthen, in 1863 was, as compared with the previous year's account. The growth continued through 1864; when we had 40,798 vessels, or 603, *i.e.* 1·5 per cent. over 1863. Our tonnage last year was 7,186,000, or 562,000, *i.e.* 8·5 per cent., in excess of the previous year's return. We are speaking of the aggregate tonnage—that which we possess in steamers as well as in sailing vessels.

"How were our merchantmen engaged in 1863? We say 1863, because upon this point there is no return for 1864 yet issued. Exclusively engaged in the home trade there were 11,133 vessels, of 860,000 tons burthen, manned by 43,815 hands, not reckoning the masters. The home trade, according to the Custom House officials, is limited to the coasts of the United Kingdom on the one side, and to those between the Elbe and Brest on the other. There were 1,810 vessels, of 318,000 total tonnage, employing 12,524 men, employed partly in the home and partly in the foreign trade; and 7,934 vessels, of 3,618,000 tons in the aggregate, manned by 128,388 hands, engaged in the foreign and colonial trade solely. The home trade occupies more than *one-fifth* of the hands who constitute the crews of the mercantile marine.

"We may now turn our attention to the rate at which the empire is now adding from its own building yards to the mercantile navy. We here separate the timber from the iron built vessels, the steamers from the sailing ships, and take the latest annual return as sufficing for the purpose in view.

New Sailing Vessels Built in the United Kingdom and in the British Possessions, and Registered as British Ships, in the Year 1864.

	Timber Built.		Iron Built	
	Vessels.	Tonnage.	Vessels.	Tonnage.
England	586	110,424	113	86,334
Scotland	121	35,136	34	32,174
Ireland	6	1,223	7	7,208
United Kingdom	713	146,783	154	125,716
British possessions	785	206,029	—	—
Total	1,498	352,812	154	125,716

We find from this statement that the British possessions turned out of their shipbuilding yards a larger number of timber vessels and a much larger amount of tonnage than the United Kingdom. Of these ships our dependencies produced 75 more than our shipbuilders at home, and 59,246, or 40 per cent., more tonnage. On the other hand, 154 iron-built sailing vessels were launched in the United Kingdom, but not one in the colonies. Taking iron and wooden ships together, the home trade produced in the year 66,000 tonnage more than the colonial builders. The North American colonies are by far the largest producers among the dependencies of the British Crown. They set afloat in 1864 not fewer than 604 timber-built sailers and 18 steamers, having an aggregate burthen of 164,000 tons. Australia and New Zealand rank next. They launched 76 sailing and 10 steam vessels, timber built, with a total tonnage of 6,058.

New Steam Vessels Built in the United Kingdom and in the British Possessions, and Registered as British Ships, in the Year 1864.

	Timber Built.		Iron Built.	
	Vessels.	Tons.	Vessels.	Tons.
England	26	966	202	97,174
Scotland	5	1,371	132	56,812
Ireland	1	56	8	2,995
United Kingdom	32	2,393	342	156,981
British possessions	28	7,027	5	289
Total	60	9,420	347	157,270

"The same superiority in quantity is maintained by the colonial builders of wooden steam vessels. The United Kingdom turned off 32 vessels, of 2,393 aggregate burthen, or of 75 tons each. The colonies produced only 28 vessels, but their tonnage amounted to 7,027, or more than twice the home figures. The colonial steamers averaged 250 tons. While the United Kingdom built 342 iron steamers, burthen 157,000 tons, during the year, the colonies only constructed 5 very small ones—probably of plates sent out from this country and put together at the colonial ports.

"The merchant fleet of Great Britain and Ireland contains a certain number of colonial and foreign built ships. The returns for 1864 give the number and tonnage of these vessels thus:—

	Vessels.	Tonnage.
Canada	15	13,560
New Brunswick	28	29,025
Nova Scotia and Cape Breton	4	1,696
Prince Edward Island	6	1,194
	53	45,475
Foreign countries	216	128,761
Total	269	174,236

"Bringing the statistics of this and the two preceding tables together, we obtain the census of the new ships added from all sources to the British register during the year—the ships built in home and in colonial yards, or that were acquired by purchase from foreigners.

A Return of the Number of Vessels that were Registered in the United Kingdom as New Ships in the Year 1864.

	Timber.		Iron.	
	Vessels.	Tons.	Vessels.	Tons.
Sailing vessels	980	318,702	157	126,921
Steam "	34	2,682	347	158,976
Total	1,014	321,384	504	285,897

"From various sources we obtain 1,518 new ships and 607,281 of additional tonnage. But in the same year we sold and transferred 1,522 vessels of 337,983 total burthen; we lost by wreck 668, of 175,763 tonnage; and we broke up 78 sailing and 27 steam vessels, which operation took away from our carrying power 10,573 tons. It is a defect of the Custom House returns, that they omit all mention of the places where the shipbuilding business is carried on. This omission might easily be remedied, for the officers collecting such particulars as are published must be cognisant of the number of vessels which our principal rivers yearly add to the mercantile marine. What number is separately launched on the Mersey, the Thames, the Tyne, the Wear, and the Clyde would make an interesting page in our industrial statistics for the year. Some notion may be gained of the relative activity of the work upon these rivers by consulting the occupation census of 1861, and noting down the persons ascribed to shipbuilding and the allied trades in the divisions which contain the busiest parts of those streams:—

River.	Division of Kingdom.	Men Employed in Shipbuilding.
Mersey	North-western	7,611
Thames	Metropolis, Kent (part), Essex	10,134
Tyne and Wear	Northern	9,824
Clyde	Scotland	9,154
Total	—	36,723

"These were the people employed, according to the last census, 'about ships,' as shipbuilders, shipwrights, block, oar and mast makers, boat and barge builders, sailmakers, and other employments connected with the shipbuilding trade.

"The import and export trade in 1864, is shown for the twelve principal ports of the United Kingdom in the subjoined table.

Twelve Principal Ports of the United Kingdom, the Entrances Inwards and the Clearances Outwards, Year ended 31*st December*, 1864.

		Vessels.	Tonnage.	Total Tonnage.
London	In	11,206	3,359,782	5,781,203
	Out	7,690	2,421,421	
Liverpool	In	4,967	2,698,522	5,351,456
	Out	4,673	2,652,934	
Newcastle	In	4,442	842,234	2,470,751
	Out	7,808	1,628,517	
Hull	In	2,945	758,953	1,384,882
	Out	2,258	625,929	
Southampton	In	1,258	368,598	728,509
	Out	1,144	359,911	
Glasgow	In	561	186,272	538,208
	Out	908	351,936	
Leith	In	1,884	329,133	537,762
	Out	650	208,629	
Greenock	In	457	191,222	324,512
	Out	255	133,290	
Bristol	In	367	232,027	303,212
	Out	250	71,185	
Dublin	In	437	117,203	160,510
	Out	131	43,307	
Belfast	In	381	88,002	112,702
	Out	66	24,700	
Cork	In	258	73,718	87,237
	Out	61	13,519	

"London and Liverpool head the list; but in respect of the export business the latter exceeds the former port by 230,000 tonnage. It will be observed also, with regard to Liverpool, that the number of ships which entered during the year, was not much over the number which cleared out—4,967 against 4,673; but that at London there was a very large difference—namely 11,206 to 7,690 vessels—in tonnage 938,000 less cleared outwards than entered. At Newcastle, on the other hand, 842,234 tonnage entered, but double the quantity cleared outwards—1,628,517. Similar differences mark the trade of other ports in the list. The vessels trading with Liverpool are obviously much larger than those engaged in the London traffic—the average burthen of the latter was 306 tons; whereas the former measured 555 tons each. The average tonnage of the ships which entered and left Newcastle last year was 202. The rapid diminution in the extent of the traffic at the various ports when each is compared with its predecessor, is plainly shown by the table. Though the gross tonnage of Liverpool is rather below that of London, yet the value of the British shipments from our great port is double that from the Thames—72,748,000*l.* against 36,555,000*l.* There are but six ports at which this part of our trade exceeded 1,000,000*l.* sterling in the year.

Declared Value of British and Irish Produce and Manufactures Exported from the Seven Principal Ports of the United Kingdom, Year ended 31*st December*, 1864.

	£
Liverpool	72,748,000
London	36,555,000
Hull	16,053,000
Glasgow	7,604,000
Southampton	4,727,000
Newcastle	1,870,000
Greenock	503,000

"The total value of British and Irish produce exported in 1864, was 146,603,000*l.*, of which very nearly 140,000,000*l.*, was sent through the seven ports named above. The Customs publish no account of the value of the imports which enter the separate ports of the kingdom. They return, however, the amount collected for duty at each port, but that, of course, is a very inadequate exponent of the extent of their respective trades. London collects nearly three times the revenue that Liverpool brings to the national exchequer, because London imports much larger quantities of taxable commodities than Liverpool.

Gross Amount of Customs Duty Received at Seven of the Principal Ports of the United Kingdom, Year ended 31*st December*, 1863.

	£
London	11,974,000
Liverpool	3,133,000
Greenock	1,231,000
Bristol	1,151,000
Glasgow	980,000
Dublin	966,000
Leith	440,000

"The Customs duties yielded in 1863 the sum of 23,589,000*l.*, of which rather more than half was collected at the port of London. Including London with the six other ports of the table, nearly 20,000,000*l.* was due to their trade.

"We will conclude with a classified statement of registered vessels belonging to the United Kingdom, classed according to their capacity, but excluding river steamers from the table.

Registered Sailing and Steam Vessels of the United Kingdom, and Number of Men, exclusive of Masters, Employed in 1863.

	Vessels.	Tonnage.	Men.
Under 50 tons	4,945	163,515	12,782
50 and under 500	13,325	2,346,460	98,427
500 „ 1,000	1,801	1,287,489	40,527
1,000 „ 1,500	710	816,102	26,317
1,500 „ 2,000	80	134,285	4,809
2,000 „ 2,700	16	34,085	1,455
13,000 „ 14,000	1	13,343	410
Total	20,878	4,795,279	184,727

Comparing this with the table giving the total registered tonnage of the United Kingdom on the 31st December, 1863, it appears that 6,972 river steamers, possessing an aggregate tonnage of 456,478 are excluded from the last statement."

III.—*The Imports, the Home Consumption, and the Exports of France in* 1863-64-65.

These statistics of the value of the principal articles of French commerce which were passed by the Customs during the three years ended with 1865, are taken from the *Economist* of the 10th February last:—

"Customs returns issued within the last few days give the total results of the year 1865, and add to them a comparison of those of preceding years. It appears that the value of imports taken out of bond for consumption was in 1865 not less than 2,782,335,000 frs., whereas in 1864 it amounted to 2,528,150,000 frs.; in 1863 to 2,426,379,000 frs.; 1862 to 2,198,555,000 frs.; and in 1861 to 2,442,328,000 frs. The value of exports of French productions was, in 1865, 3,199,453,000 frs.; in 1864, 2,924,168,000 frs.; in 1863, 2,642,559,000 frs.; in 1862, 2,242,681,000 frs.; and in 1861, 1,926,260,000 frs. In English money the imports of 1865 were 111,293,400*l.*; and in 1861, 97,693,200*l.* The exports in 1865, 127,978,120*l.*; and in 1861, 77,050,400*l.* An increase of 13,600,200*l.* in one branch of trade, and of 50,927,700*l.* in another, is undoubtedly remarkable, and even exceeds the most sanguine expectations that were formed of the treaties of commerce into which France has entered.

"The following is a detail of the principal imports taken out of bond for consumption in the last three years:—

	1865.	1864.	1863.
	fr.	fr.	fr.
Silk	297,012,000	285,844,000	291,905,000
Cotton	411,373,000	344,189,000	261,836,000
Wool	254,424,000	220,851,000	223,730,000
Hides and skins	103,562,000	102,781,000	111,038,000
Timber	115,721,000	106,634,000	104,842,000
Sugar	133,536,000	121,625,000	147,419,000
Coffee	89,236,000	83,370,000	79,792,000
Oxen	76,236,000	77,256,000	77,136,000
Cod and other fish	38,651,000	40,487,000	30,938,000
Oleaginous seeds	62,450,000	59,830,000	39,976,000
Seeds for sowing	33,548,000	21,500,000	16,520,000
Olive oil	36,939,000	29,277,000	24,549,000
Staves	26,341,000	18,241,000	20,233,000
Flax	75,077,000	52,997,000	50,551,000
Grease and tallow	24,497,000	37,885,000	44,540,000
Oleaginous fruits	22,414,000	18,366,000	19,554,000
Coal	127,161,000	115,216,000	100,014,000
Fragments of silver	35,962,000	37,434,000	35,981,000
Copper	41,331,000	46,615,000	39,873,000
Indigo	21,645,000	18,834,000	21,445,000
Woollen tissues	38,553,000	31,969,000	33,373,000
Straw plait and hats	25,131,000	22,851,000	13,470,000

"All the other articles imported were of less value than 20,000,000 frs. in 1865. Among them the following may interest English readers:—

	1865.	1864.	1863.
	fr.	fr.	fr.
Pig iron	5,934,000	3,320,000	17,690,000
Iron	1,963,000	1,199,000	4,194,000
Steel	916,000	1,062,000	1,909,000
Lead	18,245,000	9,667,000	9,505,000
Tin	11,955,000	12,254,000	9,913,000
Beer	1,636,000	1,351,000	1,682,000
Flax, hemp, and jute yarn	14,277,000	5,105,000	7,702,000
Cotton yarn	9,371,000	7,336,000	7,631,000
Woollen yarn	12,972,000	11,497,000	10,234,000
Goats' hair yarn	6,699,000	5,110,000	4,348,000
Flax and hemp tissues	14,405,000	14,311,000	12,470,000
Silk tissues	10,607,000	7,290,000	4,729,000
Hair tissues	5,703,000	6,148,000	6,411,000
Cotton tissues	11,544,000	9,466,000	8,660,000
Machinery	12,092,000	11,327,000	10,551,000
Cutlery	250,000	224,000	234,000
Needles	1,301,000	1,597,000	1,323,000
Jute	9,988,000	7,666,000	4,559,000
Hemp	17,669,000	8,440,000	4,110,000

"It will be observed that the import of iron is very small, and that of tissues and yarns much below what had been expected.

"The following were the principal exports of French productions:—

	1865.	1864.	1863.
	fr.	fr.	fr.
Silk tissues	399,095,000	407,618,000	370,293,000
Woollen tissues	376,672,000	355,862,000	293,583,000
Cotton tissues	105,413,000	93,728,000	98,179,000
Flax and hemp tissues	24,769,000	24,485,000	18,952,000
Woollen yarn	21,596,000	19,087,000	15,223,000
Prepared skins	66,186,000	61,589,000	51,928,000
Articles in skin or leather	81,242,000	89,937,000	78,545,000
Jewellery and silversmiths' work	19,280,000	19,278,000	17,752,000
Tools and articles in metal	38,195,000	45,137,000	43,714,000
Turnery, buttons, mercery, &c.	183,949,000	174,187,000	146,732,000
Millinery and artificial flowers	22,860,000	18,200,000	12,261,000
Furniture, &c.	18,871,000	20,468,000	13,603,000
Ready-made clothes and linen	115,096,000	110,394,000	82,254,000
Paper and pasteboard	16,677,000	18,562,000	17,799,000
Wines	280,601,000	234,539,000	229,738,000
Brandies	58,899,000	75,522,000	66,832,000
Perfumery	15,319,000	16,524,000	14,656,000
Refined sugar	92,905,000	74,424,000	76,552,000
Beetroot "	18,884,000	6,036,000	7,297,000
Chemical productions	64,856,000	51,921,000	47,553,000
Madder	14,305,000	9,633,000	10,361,000
Rags	12,611,000	12,148,000	9,641,000
Flax	11,834,000	7,449,000	10,132,000
Cotton*	95,090,000	57,154,000	52,168,000
Timber	31,731,000	30,403,000	30,701,000
Rosins, native	42,027,000	36,804,000	36,040,000
Oleaginous seeds and fruits	12,608,000	8,766,000	10,885,000
Seeds for sowing	34,167,000	21,520,000	10,769,000
Fish	22,731,000	15,213,000	16,054,000
Meat	11,467,000	8,962,000	7,812,000
Eggs	37,649,000	27,974,000	23,283,000
Butter	55,668,000	42,037,000	32,382,000
Wool	36,822,000	51,131,000	48,156,000
Hair and bristles	24,108,000	23,838,000	17,318,000
Silk	118,260,000	101,480,000	96,166,000
Grain and flour	114,610,000	56,220,000	48,486,000

* Cotton is counted as a French production, because it is considered nationalised when import duty is paid on it.

"The way in which the estimate of articles imported is made is to take their value at the seaport or frontier at which they arrive, without, however, counting import duties, or the taxes, discounts, &c., adopted in commerce. The value of exports is also calculated at seaports or at the frontier, without counting export or transit duties, premiums or drawbacks.

"The precious metals, which are not included in the preceding figures, stand thus:—

	1865.	1864.	1863.
Imports—	fr.	fr.	fr.
Gold ingots	97,272,543	110,097,846	83,266,419
Coin	320,177,601	353,897,754	286,467,015
Silver ingots	93,630,098	63,416,252	27,564,966
Coin	142,404,343	204,316,292	133,435,279
Total	653,484,585	731,728,144	530,733,679
Exports—			
Gold ingots	55,304,670	32,810,523	86,117,505
Coin	213,271,344	306,042,750	271,638,705
Silver in bars	93,124,310	134,106,666	126,123,911
Coin	70,420,424	176,098,751	103,216,950
Total	432,120,748	649,058,690	587,097,071

"In 1865 the imports exceeded the exports by 221,363,737 frs., and in 1864, by 82,669,454 frs. These two sums make 12,161,332*l.* English. In 1863 the exports exceeded the imports by 56,368,392 frs., or 2,254,536*l.*

"Subjoined is a detail of the countries from and to which imports and exports of the precious metals were made in 1865:—

	Gold.			
	Imports.		Exports.	
	Ingots.	Coin.	Ingots.	Coin.
	fr.	fr.	fr.	fr.
England	85,716,135	88,744,605	12,735	21,244,716
Belgium	162,510	14,506,842	712,872	1,150,776
Zollverein	54,660	69,019,200	8,742	845,862
Spain	—	—	17,830,446	2,778,693
Kingdom of Italy	2,394,870	58,065,600	36,708,000	115,521,450
Switzerland	—	—	—	9,544,905
Roman States	—	—	—	55,800
Turkey	—	—	—	1,690,500
Egypt	—	—	—	39,740,700
United States	5,361,000	2,094,000	—	35,040
Other countries	3,583,368	87,747,354	31,875	20,662,902
Total	97,272,543	320,177,601	55,304,670	213,271,344

	Silver.			
	Imports.		Exports.	
	Ingots.	Coin.	Ingots.	Coin.
	fr.	fr.	fr.	fr.
England	8,058,031	10,446,464	2,377,820	4,518,194
Belgium	9,420,510	22,541,380	6,222,022	13,333,336
Zollverein	358,900	22,116,184	2,555,207	1,682,282
Spain	—	46,767,990	167,600	856,742
Kingdom of Italy	69,660,368	14,681,300	442,400	7,854,800
Switzerland	—	—	—	536,285
Turkey	—	—	—	62,200
Egypt	—	—	—	11,670,800
British India	—	—	42,946,400	13,206,400
China	—	—	1,095,400	872,000
United States	—	169,800	—	—
Other countries	6,132,289	25,681,221	37,317,461	12,979,385
Total	93,630,098	142,404,343	93,124,310	70,420,424

On referring to the "Statistics of French Commerce," in vol. xxvii. of the *Journal* (p. 129 *et seq.*), the reader will be able to compare the value of most of the articles of import and export as given above, with the returns for 1861 and 1862. That account, with the present figures, will, therefore, show the trade in those articles for five consecutive years.—Ed. *S. J.*

IV.—*Arbitration in the Building Trade.*

The satisfactory settlement of trade disputes between masters and men by arbitration, is not common in this kingdom. Arbitration, however, is sometimes successful, as the *Building News* has recently shown with respect to certain trade differences at Wolverhampton.

"Since the adoption of the new rules by the masters and men of Wolverhampton, several instances have occurred in which the wisdom of that course has been proved. Only one dispute, however, has arisen since that step was taken, and that has been disposed of in the most amicable manner. Our local correspondent informs us that a builder in the town, who has the contract for the erection of a new circus, a temporary timber building in Darlington-street, employed some of his men part of the day in the workshop and the other part upon the circus, which, it appears, both parties agreed was an unprotected building. By Rule 4, it is provided that 'men working on unprotected buildings shall be paid ½*d.* per hour additional (to the 5¾*d.*) for six weeks before and six weeks after Christmas day.' By Rule 5, 'the shops and works shall be open from six o'clock in the morning till half-past five in the evening for the first five working days of the week * * allowing one hour and a half per day for the meals; but from six weeks before till six weeks after Christmas day workmen on unprotected buildings shall work from seven o'clock in the morning till five o'clock in the evening on the first five working days of the week, with one hour per day allowed for meals.' The master had put a wrong construction upon these rules, according to the opinion of the men, and it was therefore decided to call for an arbitration. The umpire, Mr. Robert Kettle, appointed Monday last. The business of the meeting was conducted on both sides with excellent feeling, and at the close the umpire decided in favour of the men. The master having supplied the amounts due to each man, so that the umpire could make a legal award, the meeting concluded with a vote heartily given by both parties to Mr. Kettle."

Further and equally gratifying intelligence upon the same case, has been recently furnished by the *Birmingham Daily Post*, from which the subjoined paragraph is taken :—

"At Wolverhampton, somewhat over twelve months since, the master builders and their carpenters and joiners adopted, with the assistance of Mr. Rupert Kettle, a code of rules for settling all future disputes between them in their trade by arbitration. One of the rules required that all alterations should be made after due notice, so as to come into operation at the spring of every year, before the employers made their contracts with their customers. A few days since the men gave notice for an alteration this spring. The alterations which the men required were a rise to 6*d.* an hour, being an advance of ½*d.* an hour. They also required that a Saturday half-holiday should be made imperative, subject to payment as overtime after one o'clock; and they further required certain alterations as to the mileage walking in masters' time. The masters, on their part, sought under Rule 8, and gave notice of a proposition to alter Rule 4, the rule upon which the arbitration took place some few months ago as to extra payment for work on unprotected buildings. On Monday evening the representatives of the masters and men, six on each side, again assembled. The result arrived at was that the wages were increased to the extent which the men required; that where men were employed on unprotected buildings, from six weeks before and six weeks after Christmas, they were not to claim the extra payment, provided they had the option of filling up their full time by working in the shop, it being the intention of both parties that the same class of men should have the option of earning the same amount of wages wheresoever they might be employed, thus dispensing with all difficult questions about the hours of daylight, &c. The question of a half-holiday was satisfactorily settled by providing that the wages each week should be reckoned up to Friday night, and that they should be paid at the principal pay office of the firm between the hours of one and two o'clock on Saturday; and that all the men who required a half-holiday on Saturday should walk to the pay office in their own time; others to be paid either at the job, or at the pay office, at four o'clock, as before. The chief representative of the men said he could not allow the occasion to pass over without, on behalf of himself and of the working men who were with him, expressing the great satisfaction they felt at the candid and conciliatory spirit in which the masters had met and discussed the propositions they (the men) had made; and the masters on their part, through their chairman, said that nothing could be more gratifying to them than that their men should meet them for reasonable and free discussion, with minds open to conviction and unwarped by prejudice. They (the masters) had concealed nothing, and they should be glad at all times to meet any branch of the building trade, and candidly discuss, as independent men of business, the whole trade bearings of their relative positions."

V.—*The Finances of the United States in* 1865.

In December last the *Economist* gave certain details of (*a*) the paper circulation; (*b*) the debt; (*c*) the revenue; and (*d*) the expenditure of the United States. That statement is here reprinted with a very slight addition, designed to keep the paragraphs more distinct.

(*a*) "The paper circulation of the United States, on the 31st of October last, was substantially as follows:—

	Dols.
1. United States notes and fractional currency	454,218,038
2. Notes of the national banks	185,000,000
3. „ State banks, including outstanding issues of State banks converted into national banks........	65,000,000
Total	704,218,038

"On the 31st day of October, 1865, since which time no material change has taken place, the public debt, without deducting funds in the Treasury, amounted to $2,808,549,437, consisting of the following items:—

	Dols.	Dols.
Bonds, 10–40s, 5 per cent., due in 1904	172,770,100	
„ Pacific Railroad, 6 per cent. due in 1895....	1,258,000	
„ 5-20s, 6 per cent., due in 1882, 1884, and 1885	659,259,600	
„ 6 per cent., due in 1881	265,347,400	
„ 5 „ '80	18,415,000	
„ 5 „ '74	20,000,000	
„ 5 „ '71	7,022,000	
		1,144,072,100
Bonds, 6 per cent., due in 1868	8,908,341	
„ 6 „ '67	9,415,250	
Compound interest notes, due in 1867 and 1868	173,012,141	
Seven-thirty Treasury notes, „	830,000,000	
		1,021,335,732
Bonds, Texas indemnity, past due	760,000	
„ Treasury notes, &c., past due	613,920	
		1,373,920
Temporary loan, ten days' notice	99,107,745	
Certificates of indebtedness, due in 1866	55,905,000	
Treasury notes, 5 per cent., 1st December, 1865	32,536,901	
		187,549,646
United States' notes	428,160,569	
Fractional currency	26,057,469	
		454,218,038
		2,808,549,437

(*b*) "The following is a statement of receipts and expenditures for the fiscal year ending 30th June, 1865:—

	Dols.	Dols.
Balance in Treasury agreeably to warrants 1st July, 1864	—	96,739,905
Receipts from loans applicable to expenditures	864,863,499	
„ applied to payment of public debt	607,361,241	
		1,472,224,740
Receipts from customs..	34,928,260	
„ lands	996,553	
„ direct tax	1,200,573	
„ internal revenue	209,464,215	
„ miscellaneous sources	32,978,284	
		329,567,886
		1,898,532,533

Expenditures.

	Dols.	Dols.
Redemption of public debt	—	607,361,241
For the civil service	44,765,558	
„ pensions and Indians	14,258,575	
„ the War Department	1,031,323,360	
„ the Navy „	122,567,776	
„ interest on public debt	77,397,712	
		1,290,312,982
Total		1,897,674,224
Leaving a balance in the Treasury on the 1st day of July, 1865, of		858,309

(*c*) "The receipts for the year ending 30th June, 1867, are estimated as follows:—

	Dols.	Dols.
From customs	100,000,000	
„ internal revenue	275,000,000	
„ lands	1,000,000	
„ miscellaneous sources	20,000,000	
		396,000,000

(*d*) "The expenditures, according to the estimates, will be:—

For the civil service	42,165,590	
„ pensions and Indians	17,809,644	
„ the War Department	39,017,416	
„ the Navy „	43,982,457	
„ the interest on public debt	141,542,063	
		284,317,181
Leaving a surplus of estimated receipts over estimated expenditures, of		111,682,818

VI.—*Belgian Constituencies.*

The subjoined article, upon the occupations of the enfranchised classes in Belgium, recently appeared in the *Morning Post.*

"As more than usual interest is at present attached to all that relates to the political state of Belgium, some information on the subject of the constituencies of that kingdom may be acceptable, and besides, it may not be altogether without its use in this country when measures are understood to be taken by the Government to ascertain what is the state of the county and borough registers, with a view to a reform in the representation of the people, which must, sooner or later, be brought under the consideration of Parliament.

"An opportunity has fortunately been afforded for knowing something authentic of the Belgian constituencies, by the Minister of the Interior having published a statistical account, in which the electors of the representatives in the two legislative chambers are described according to their professions; and although this return has reference only to 1864, it may be presumed that it will sufficiently serve the purpose for this year also, as the changes cannot be supposed to have been either numerous or important, although, when the comparison is made between the list now published and another which appeared in 1847, the difference is so great that there can be no doubt as to the progress that has since been made alike in the population and the prosperity of that industrious and interesting nation.

"In this return the electors for the whole kingdom are included, but as there has also been obtained from other sources a similar statement as to the metropolitan district of Brussels, that is likewise added, both being as follows:—

	Brussels.	Kingdom.
Farmers and agriculturists	1,181	25,200
Manufacturers and mill owners	190	3,164
Butchers	258	1,420
Bakers and pastry cooks	378	2,299
Brewers	141	1,818
Millers	122	2,190
Contractors, masons, joiners, and painters	494	2,362
Goldsmiths, jewellers, and watchmakers	99	452
Printers and booksellers	68	328
Other tradesmen	1,520	5,338
Innkeepers, &c.	101	1,654
Retail shopkeepers	1,655	9,819
Spirit dealers, &c.	1,609	11,425
Merchants, shipowners, &c.	853	5,515
Bankers, &c.	31	334
Civil service functionaries of the State	404	2,076
Civil service functionaries of the provinces and communes	210	2,517
Judges, &c.	80	391
Barristers and attorneys	204	956
Notaries	68	916
Ministers of religion of all denominations	194	2,332
Professors, teachers, &c.	115	704
Physicians and surgeons	215	1,556
Apothecaries, &c.	105	758
Literary men, journalists, &c.	15	57
Artists, sculptors, architects, &c.	248	622
Military officers	95	268
Landed proprietors, life renters, &c.	1,582	10,414
Others not classified	967	6,832
Total	13,152	113,717

"In 1847, the number for the kingdom was only 46,330, since which period it has been more than doubled. The agriculturists were then only 14,500, instead of 25,200, as in the above table; while there has been a similar change as to the clergy of all denominations, of which the number has increased from 874 to 2,332. It would appear, however, that the various interests are fairly enough represented, although at one time it was alleged that the wealthy had the advantage of the industrious, but as no complaints of that kind are now heard, it may be supposed that both of them have found their level.

"Taking the population of Belgium and of Great Britain and Ireland as a criterion, the number of electors in the United Kingdom, according to the above Belgian scale, should be about 640,000; but it should be kept in view that, in Belgium, the same electors choose the members both of the Senate and of the Chamber of Representatives; and although this has been considered to be an anomaly, it ceases to be so when the qualification for a senator is taken into account, as the number of such who have paid direct taxes to the extent

2,116 frs. 40 c. and who have attained the age of 40, is very limited, there being only of such in Brabant 120; in East Flanders, 95; in West Flanders, 65; in Antwerp, 60; in Namur, 38; in Liege, 32; in Limburg, 11; and in Luxembourg no more than 2; from which it has been found that those elected are sufficiently aristocratic to render the Senate a safe bulwark against any democratic movement that is ever likely to be attempted in that kingdom."

It is here manifest that half the voters for the kingdom come under four classes of occupation, and in this order, viz.:—

25,200 are farmers and agriculturists,
11,425 „ spirit dealers, &c.,
10,414 „ landed proprietors, life renters, &c., and
9,819 „ retail shopkeepers.

Ed. *S. J.*

VII.—*On the Prices and Manufacture of Plate Glass in England, France, Belgium, and Russia.*

In 1850 Mr. Henry Howard, of Plaistow, Essex, furnished to the *Journal* some statistics of the prices of British plate glass, from 1760 to 1847,[*] accompanied by some remarks upon the way in which the production of glass had been influenced by the duty.

Mr. Howard has recently brought his accounts of the manufacture in this country down to last year, adding the tariff prices of the French, Belgian, and Russian trade in 1865, as shown in the following table:—

"The manufacture of plate glass in England existed in the vicinity of London

Where Made.	Date.	Prices at which Sold by Trade Tariff per Superficial							
		12 by 12 Inches.	24 by 18 Inches.	36 by 24 Inches.	48 by 30 Inches.	60 by 42 Inches.	60 by 48 Inches.	96 by 60 Inches.	120 by 72 Inches.
		Per foot	Per foot	Per foot	Per foot	Per foot	Per foot	Per foot	Per foot
England	1760	5/2	6/2	12/8	40/9	81/	None made in England larger		
„	1819	13/1	15/10	16/5	About 24/	About 28/	About 30/	About 60/	Abt. 160/
„	'27	6/8	9/9	10/9	13/2	18/10	19/1	26/2	39/4
„	'36	7/	9/	9/	10/	13/2	14/	20/	24/5
„	'45 Duty paid	7/	9/	9/	10/	13/2	14/	20/	24/5
„	1847 Duty free	3/4	5/1	6/10	8/4	11/10	12/10	19/5	24/5
„	1865	1/7 to 2/1	2/2 to 2/8	2/4 to 2/11	2/9 to 3/4	3/ to 3/7	3/ to 3/7	3/1 to 4/3	3/5 to 5/
France	'65	2/ „ 2/6	2/5 „ 3/	2/7 „ 3/4	2/11 „ 3/9	3/2 „ 4/4	3/2 „ 4/4	3/6 „ 5/	3/10 „ 6/
Belgium	'65	The Belgian rates are somewhat lower than the French, and a shade higher than the							
Russia...........	'65	2/1	—	4/5	—	—	—	9/1	17/2

Explanatory Notes.—The profits derived from this manufacture in the last fifty years have been very large. About only other house then existing is known to have realized a net profit of 30,000*l.* @ 40,000*l.* per annum for some years on a

The tariff rates of 1836 and 1845 were the same, but the trade discounts in 1845 were much larger; hence the average feet per week, as shown in columns 2 and 3.

The present estimated make of plate glass proper, viz., 140,000 feet, as given in column 2, is exclusive of the of Sunderland, which, together, are estimated at 50,000 to 60,000 feet per week additional.

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[*] See vol. xiii, p. 80 *et seq.*

(Vauxhall) in the seventeenth century, and it was afterwards established at Newcastle-on-Tyne, where the same works have been carried on since 1728. It was not, however, prosecuted on any scale of magnitude till 1769, when, under the auspices of the then Lord Dundas, the British Plate Glass Company was formed, which was incorporated 1773, and whose works, established at Ravenhead, St. Helen's, Lancashire, are still in existence. Originally the manufacture was perfectly free, but in the exigencies of war during the last century a duty was imposed first of 49*s.* per cwt., afterwards increased to 98*s.*, at which rate it remained till 1819, when it was reduced to 60*s.*

"By the above table it will be seen that, owing to the obstructive character of the excise laws, the increased production in the seventeen years, from 1819 to 1836, was only from 3,000 to 7,000 feet per week. In the latter year, however, the manufacture, which was then confined to the two original houses now existing, received an extraordinary impetus by the introduction of new undertakings on an improved footing, which in the nine succeeding years, 1836 to 1845, had the effect of raising it to more than treble its former extent, or from 7,000 to 23,000 feet per week, at a great reduction of cost to the public. In 1845 the excise duties on glass were abolished. In proposing their repeal, Sir R. Peel declared in parliament, '*If you leave it altogether disburdened, as in Bohemia, France, and Belgium—if you give full and unobstructed freedom to the capital and enterprise of this country*—with its peculiar advantage of material—the command of alkali and coal—*my belief is you will supply almost the whole world.*'—Vide *Times*, 15th February, 1845.

"Thanks to the wisdom of that measure, freedom from fiscal regulation has opened the door to extraordinary advantages, by means of which the cost of production has been reduced to a point below that of any other country. Thus, in coal, the savings effected by unrestricted action are no less than 80 per cent. in quantity alone, involving a corresponding decrease in the cost of furnaces, fire-clay, pots, tools, labour, and also in the erection of buildings that now suffice. The cost of coal, therefore, which, in London, in 1826 exceeded 1*s.* 10*d.* on each superficial foot of glass, is now about 2*d.* per foot. Sand, also, which is its base, forming as it does, nearly three-fifths of its composition, is now obtained near London in

Foot.		1	2	3	4	5
144 by 75 Inches.	144 by 76 Inches.	Rate of Excise. Duty per Cwt.	Estimated Number of Feet Sold per Week.	Estimated Average. Selling Price per Foot. Polished.	Character of Supply.	Profit Realized.
Per foot	Per foot					
than 60 by 48.		Free	Not known	Not known	Very indifferent in quality.	Not known
—	—	98/	About 3,000	20/ @ 25/	No complaint on that head	Very large
—	—	60/	„ 5,000	10/ „ 12/	Inadequate to demand.	„
27/4	27/7	60/	„ 7,000	8/ „ 9/	Inadequate	„
27/4	27/7	60/ and 5 per cent. added	„ 23,000	Say 6/	„	10 per cent. and upwards
27/7	35/6	Free	„ 50,000	4/ @ 5/	Better supply	Large profits but amount not known
4/ to 6/6	4/ to 6/6	„	„ 140,000	2/ and upwards, according to quality	Insufficient supply	18*l.* 6*s.* 8*d.* per cent. paid by one Company in 1863
4/6 to 8/ English	4/6 to 8/	„	Say about 16,000	2/6 and upwards	Superior to British	—
		„		2/5	„	—
—	—	„	—	Not known	—	—

1833, certain 100*l.* shares in the British Plate Glass Company were sold at public auction for more than 300*l.* each, and the capital of 100,000*l.* or less.

selling price fell from 8*s.* @ 9*s.* to about 6*s.* per foot, and the result is seen in the increased production from 7,000 to 23,000

patent plate of Messrs. Chance Brothers, of Birmingham, and also of the patent rough plate of Messrs. Hartley boundless supplies at 3*s*. 6*d*. and upwards per ton, of a quality superior to the Lynn sand formerly used at 18*s*. per ton. Again, the direct charge of labour, which, in 1826, exceeded 1*s*. 6*d*. per foot, is now about 5*d*. per foot, and, notwithstanding this enormous reduction of more than 70 per cent., the average rate of wages for skilled labour is higher by 20 per cent. than forty years ago.

"In 1819 two furnaces, each having a huge chimney-shaft, were required to produce 1,000 feet per week, while at the present time two furnaces, with only one chimney-shaft, suffice for the production of 12,000 feet, with the same, if not a less consumption of fuel. Similarly, though in a less degree, grinding and polishing benches, which then finished 200 feet each per week, now accomplish 500 to 700 feet, which, by judicious means, may be still further increased to 1,000 feet and upwards.

"By these means the whole cost has been reduced to nearly the price of common duty-paid window glass thirty years ago: hence the great and rapidly growing demand, which now exceeds all precedent, and which, when certain important improvements now in progress shall have been carried out, must render its application in private dwellings almost illimitable.

"The manufacture is now confined within the narrow limits of six establishments, five of which were formed under the paralyzing restrictions of excise laws—and they are, therefore, of such construction as to debar them from that full scope of improvement and advantage which a state of absolute freedom has opened up—while the sole undertaking that the repeal of duty has called into existence, and the only one that has been established in the last twenty-nine years, has, by its superior adaptation to the altered state of things, derived greater profits than any others, having realized nearly 20 per cent. per annum for many consecutive years.

"The inability of foreigners to sustain British competition was clearly exhibited in 1849, when previous high rates here having moderated, their imports receded from 2,600 to 1,300 feet per week.

"From that period the then *superior make of this country has been grievously neglected*—hence the encouragement since accorded to the finest fabrics of France and Belgium, not only in the home trade, in which their imports have increased *twelve-fold*, but also in important markets abroad, where the manufacture does not exist, and where, in the absence of such supplies from England, they obtain rates greatly beyond those of the present British make.

"No other productions enter into competition with the English, save those of France and Belgium, nor is the manufacture of Russia introduced in the above table, except as showing its feeble condition under a system of protection, which is such, that by recent authentic advice from St. Petersburg, the Imperial Glass Manufactory there is nearly shut up, and but few hands employed.

"By official returns specially furnished by the Chancellor of the Exchequer, with permission to publish, these imports were, in 1862 and 1863, 2,053 tons,—value 202,218*l*.; which, at 2*s*. 6*d*. per foot, represents 16,000 feet per week,—a quantity, which, if made in England, would afford a large amount of employment, and realize a net profit of 30,000*l*. a-year. Such, however, is the onward progress of the trade, that, in the face of this discouragement, the exports of British plate glass, since 1849, have increased about *ten-fold*. And it is a remarkable fact, that the total exports of British glass have been augmented in a much greater ratio than those of earthenware.

"In the discussion in Parliament on the repeal of duty, Sir R. Peel expressed his belief that, duty-free, it could be produced in this country at a cost of 3*d*. per pound, but the results that have arisen from freeing the springs of industry, have more than realized the anticipations of that distinguished statesman, inasmuch as the ordinary rough plate as extensively used for roofing purposes is sold, in moderate sizes, at rates not exceeding half the amount then predicted, or say 12*l*. to 14*l*. per ton, being a near approximation to the cost of ordinary iron castings.

"No manufacture of this description exists in all the eastern hemisphere, nor in any part of the great continent of America, the whole of their supplies being drawn from Western Europe.

"Some forty years ago a shipment of polished plate glass was made from London to China, for the purpose of being painted on. The plates were of such dimensions as realized 16*s*. to 17*s*. per foot, and the amount was about 2,000*l*.

"Looking at the fact that such a demand then existed at so high a rate of cost, and seeing also that the Japanese looking-glass consists of costly highly polished steel, what may be the future results from the opening up of those vast regions, with their teeming millions, when such supplies can be obtained from this side at one-sixth their former cost?

"In addition to the ordinary purposes to which glass is applied, there is probably none in which it possesses greater usefulness than in slabs for flooring and underground purposes, combining, as it does, greater strength than the York flag, with the additional advantage of conveying light. With a view to its adoption in this form in the Royal Navy, certain slabs were tested at Her Majesty's Dock Yard, Woolwich (the late Duke of Northumberland being then First Lord), when, under a severe trial, they bore a pressure exceeding a ton weight without the slightest injury.

"About twenty-five years ago a supply of such slabs was required for the purpose of flooring a palace of one of the Native Princes of India, but the excise restrictions then prevailing precluded its supply from England at less than 30*s*. per foot, though it could now be afforded at 3*s*. to 4*s*. per foot.

"Again, the successful application of glass to the sheathing of iron ships, as recently tested in the Royal Navy, and the consequent freedom from the incrustation, inseparable from both wood and iron, indicates a new and important opening in the further progress of the trade.—Vide *Times* Naval Intelligence, 16th February, 1865.

"Briefly, then, the main facts are these:—In 1819, the make, which, under a high rate of duty, was 3,000 feet per week, sold at 20*s*. @ 25*s*. per foot, has in 1865, duty free, increased to 140,000 feet, sold at 2*s*. and upwards per foot—thus showing that a reduction in price of 90 per cent. (or say 20*s*. to 2*s*.) has opened the door to an increased production amounting to nearly 5,000 per cent., irrespective of the extensive productions of the eminent houses above referred to.

"Under these circumstances the British maker is enabled to realize a profit of nearly 20 per cent. per annum, while the most celebrated continental houses are understood to be deriving not more than about half that amount, which may account for the fact that neither France nor Belgium permits the introduction of British glass duty free.

"Great, however, as has been its progress, it is manifest from the foregoing facts that the intentions of Sir R. Peel are still but very imperfectly fulfilled; nor does any other result seem probable while this rising branch of industry is confined within its present circumscribed limits.

"But when British enterprise shall be awakened to its advantages, sanitary as well as commercial—when the vast and unequalled resources of this country shall have stimulated that more full development of which it is susceptible, there cannot be a doubt that British supremacy in the cost of production must ensure its true position, not only in the home market, but, as the great author of its freedom predicted, in '*almost the whole world*.'"

VIII.—*Esparto Grass.*

THE following brief but interesting account of the utilisation of a raw material new to commerce, is taken from the *Economist*:—

"The important position which the lately discovered article of petroleum has rapidly taken in commerce is very interesting in itself, as suggesting how quickly the discovery of any new principle of motion would exercise an important influence on the present state of our industry. Another discovery has lately been made, which, though of less importance than that of petroleum, is still so interesting in character, and so useful as regards an important article of manufacture, that we think our readers will be glad to receive the following information on the subject.

"We allude to the discovery lately made of the applicability of the Atocha, or as it is called is Spain, 'esparto,' to the manufacture of paper. Mr. Lloyd, of the Walthamstow Paper Mills, is stated to have had a great share in the merit of this discovery; and Mr. Mark, the British Consul at Malaga, has drawn up an interesting report on the subject, which has lately been made public in the commercial reports.

"This grass is the produce of waste lands—it requires no expense in cultivation and little in collecting. It is best propagated from the roots and not from seed. It is perennial and propagates of itself, and improves by a regular yearly gathering if plucked with sufficient care. Mr. Mark has devoted great care in his endeavours to ascertain the climate and soil which are favourable to the development of the plant; and it appears that the Atocha requires a decidedly hot and dry climate,—that it grows equally well in the plains and in the mountains to a moderate elevation,—and that, as regards soil, it flourishes both in calcareous and argilaceous soils, or when these soils are blended in the form of marl.

"The greatest quantity is shipped from the provinces of Almeria and Marcia; but it is found, though in less abundance, in all the southern provinces of Spain. It is also said to be plentiful in some parts of the opposite coast of Africa, and shipments are made from Oran to England.

"Prior to the discovery of its being available for the manufacture of paper, the esparto had been used in Spain as fuel, in the manufacture of ropes for mining and rigging, and for making baskets and matting. But the discovery of the valuable properties of the grass has made a complete revolution in the districts where it grows. Fortunes have been realised by individuals who were the proprietors of the land which produce it. The price has more than doubled, and is now estimated by Mr. Mark at 4*l.* 2*s.* per English ton on board. The greater part of the exports have as yet been directed to England, where, in the brief space of three or four years, the article has become a requisite of the highest importance, 160,000 tons having been, as it is said, imported into England in that period; and Mr. Mark estimates the present rate of annual export at 50,000 tons.

"Mr. Mark anticipates that, even at its present enhanced price, the Spanish grass will take a place with cotton, hemp and wool, as one of the staple and essential bases of manufacturing industry, and if this anticipation should be realised, in addition to the valuable resource which it seems likely to prove to our paper manufacturers, it will form an important element in trade between this country and Spain; indeed we already learn that our shipowners have largely profited by a discovery which has enabled them to find freights for their vessels employed in conveying coals and machinery to the mining districts in Spain, and which had hitherto, in the majority of cases, been under the necessity of returning to England in ballast."

IX.—*The Poll Book for Manchester in* 1690.

MR. WILLIAM LANGTON, of Manchester, in contributing to a volume of Miscellanies, issued by the Chetham Society, a transcript of "*A Pole Booke for y^e Towne of Manchest^r granted to y^{rr} Majesty^s towards the Reduceing of Ireland and Carreying on y^e Warr against Ffrance. Assessed y^e 22^d day of May, Anno Dmi.* 1690," has furnished to the economist and the antiquary a base line from which the progress of the great metropolis of our cotton trade up to the present time may be, to a certain extent, measured. To the particulars of the assessment which are stated for each person liable, Mr. Langton has appended the following remarks :—

"The document here printed bears an uncomplimentary endorsement in a contemporary hand writing :

'Generation of Vipers.'

"It is not a complete census of the population of Manchester in 1696, as the Act of Parliament (1 William and Mary, cap. 13) by which this taxation 'by a poll or otherwise' was decreed, exempts persons receiving alms of the parish, and their children under 16, all children of day labourers, and of servants in husbandry under sixteen, and persons who by their poverty are exempt from contributions to church and poor rates; also the children under 16 of persons having four or more, and who are not worth in lands, goods or chattels 50*l.* By this act gentlemen having estates of 300*l.* or more are required to pay 2*s.* per £; 1*s.* per £ is charged on profits of office; pensions exceeding 20*l.* pay 3*s.* per £; advocates and practitioners of physic 3*s.* per £; servants' wages of 3*l.*, 1*s.* per £; and under 3*l.*, 6*d.* per £; 10*s.* per 100*l.* is charged on all who have any personal estate, whether in debts owing to them or otherwise; while every one except those exempt is required to pay 1*s.* each. Various ranks and degrees are also chargeable upon a graduated scale, and provision is made for doubly charging persons having several mansions.

"The assessors in Manchester appear to have levied the poll tax of 1*s.*, except in cases of accidental omission. The only double assessments to this tax are those of Mrs. Goolden and her maid (the former being also doubly assessed on her personalty), on the ground of their being Roman Catholics. The warden of the collegiate church is assessed at 5*l.*, being a doctor of divinity, and 5*l.* for his benefice. Mr. Kiniston is the only other person named as a minister of religion; but in 'Mr. Henry Newcombe,' assessed also at 1*l.*, we recognise the reverend founder of the Presbyterian congregation in Manchester; and in Mr. Finch, another ejected minister, who settled in Manchester and officiated some time at Birch. Mr. George Ogden, residing in Deansgate, and rated as a gentleman, may have been one of the fellows of the collegiate church, as possibly may also have been Thomas Hall, living in Churchyard Side, rated to the poll only; but no entries on the roll answer to the names of the two other fellows, Francis Mosley and Richard Warburton. In William Barrough, gent., residing in Millgate, we may probably have Mr. Barrow, the head master of the grammar school.

"Five esquires pay 5*l.* each, in addition to the poll tax, viz., John Leaver, who is rated on a personalty of 500*l.*; Oswald Mosley, who returns no personal property; and Joseph Yates, George Piggott, and Edward Cheetham, each rated at 1*l.* for their practice, being doubtless barristers.

"Six other men rated for practice are all styled gentlemen, and pay 15*s.* each, viz., John Berrow, Nathaniel Leech, John Waite, Mr. White, James Staynrod, and Radcliffe Alexander, the latter being also taxed on a personalty of 200*l.* It does not appear what profession these persons followed. If any of them were medical men they cannot have enjoyed the rank of doctor of physic, or they would have been liable to the same rate as a doctor of divinity. One person has the words 'for practice' after his name, while no tax upon it was levied. Two 'gaigers' are charged at 50*s.* each, and one pensioner of 30*l.* per annum pays 1*s.* per £, while the act appears to authorise the collection of 3*s.* per £.

"One of the assessors, Samuel Drinkwater, is rated at 1*l.*, without its being stated whether this was on personal property or in consideration of rank. This is also the case with Mr. Henry Newcombe and Mr. Finch. Wages and other income chargeable by the act appear to have escaped taxation except in the cases above cited.

"The act prescribes a tax of 1*l.* on every person above 16 years of age writing himself gentleman. Of such there are assessed 52; about half of this number also paying on personalty or for practice.

“Only 118 persons pay a rate upon their personalty. John Leaver, Esq., is the only man rated at 500*l.*; Thomas Minshall the only one at 400*l.*; there are 7 assessed at 300*l.*, four of whom claim the title of gentlemen, and three of whom are ladies; 34 are rated at 200*l.*; 75 at 100*l.*; of these there are three ladies, Mrs. Shuttleworth, Mrs. Drake and Mrs. Howerth, who are also taxed with 1*l.* 13*s.* 4*d.* each as esquires' widows; Mrs. Mosley and Mrs. Halstead, also esquires' widows, paying nothing in addition for personalty, though Mrs. Mosley's two daughters do so.

“The domestic economy of the town seems to have been frugal. In 151 cases women servants only are recorded; in 66 cases, both men and women.

“Where women servants *only* were employed, there were—

133	cases with 1 servant	=	133
16	„ 2 servants	=	32
1	„ 3 „	=	3
1[*]	„ 4 „	=	4
151			172

“Where men servants also were kept there were—

50	cases with 1 maid	=	50
11	„ 2 maids	=	22
5	„ 3 „	=	15
66			87

“Total number of women servants, 259.

“There appear to have been

35 cases keeping 36

men servants, where no women servants are recorded.

“Where women were also employed, there appear to be—

52	cases of 1 man	=	52
12	„ 2 men	=	24
1	„ 3 „	=	3
3	„ 4[†] „	=	12
1	„ 1 journeyman[‡]	=	1
2	described as brewers	=	2
106			130

“Where apprentices are recorded, there are—

18	cases of persons having 1	=	18
1	„ „ 2	=	2
1	„ „ 3	=	3
20			23

“[*] Probably an inn, a brewer being also named.

“[†] One of them being a man cook.

“[‡] Some of the other men servants were probably journeymen, but only one case is so described.”

" In one house the names of 12 ladies, boarders ('tablers'), are recited.

" There appear to have been 54 widows and 23 widowers having children living with them, viz., with—

1 child	....	35	=	35
2 children	....	24	=	48
3 "	....	10	=	30
4 "	....	6	=	24
5 "	....	2	=	10
		77		147

" And 174 married couples, having—

1 child	....	57	=	57
2 children	....	45	=	90
3 "	....	33	=	99
4 "	....	19	=	76
5 "	....	11	=	55
6 "	....	7	=	42
7 "	....	2	=	14
		174		433

Total number of children living with their parents....	580
Besides grandchildren..	7

" 360 married couples appear to have been without children living with them. Total number of married couples, 534.

" It is not easy to estimate what was the total population of the town of Manchester at the date of this poll. Judging from the table of births, deaths and marriages, there must have been but little change in the parish during the previous period of a hundred years, in two of which there had been a great waste of life from the plague. The survey of 1650, quoted by Aiken, describes the town as a mile in length, and as containing 48 subsidy men, besides a great number of burgesses; but no enumeration of the population is recorded until 1710, when it was stated to be 8,000.

" The growth of the town after this time was rapid, the returns of 1773 giving 24,386 as the population of the township, and that of 1788, 42,821.

" The registers of the mother church yield very uncertain data for estimating the total population of the township, which is only one of twenty-nine comprised in the parish of Manchester.

" The rate-books also afford no assistance in drawing a conclusion on this subject, as the early series of them is imperfect, and as none are preserved in the overseers' office of prior date to the year 1706.

" The rate laid in that year was 'eleven pence in the pound upon feild land, and tenn pence in the pound upon house land.' The following table gives a summary of the assessment. It will be observed that no new streets are named beyond those given in the 'Pole Book' of 1690, nor are there any in the rate-book of 1712. In that of 1716 'St. Ann's Square' appears. In 1717 'Cross' is a name substituted for 'Market Place.' In 1719 'New Street' occurs. In 1721 and 1723 there is no new name. The Roll of 1724 is imperfect, but we there find 'High Street,' 'Knott Mill Lane,' and 'King Street;' 'St. James's Square' being mentioned incidentally. In this last-named quarter, however, no inhabitants are named in the Rolls either of 1725 or 1729.

" In the assessment of 1706 one Joseph Dand is described as a quaker, and William Browne as a Scotchman. Trades are not frequently named. Madam

Birch, of Birch, is rated in Smithy Door; Madam Guilliam, in Hanging Ditch; Madam Drake, in Milngate; and Madam Lightbowne, as one of John Kay's tenants. George Pigott, Esq., in Churchyard Side, and Robert Lever, of Alkrington Hall, Esq., for land in Market Street Lane, where Nathan Sandiford lived. Sir Robert Booth's heirs have land in Market Place, and Butterworth, of Belfield, in Milngate. The only inn named is the Nag's Head, Deansgate."

X.—*Number of Parliamentary Electors in England and Wales.*

These summaries are taken from the Electoral Returns recently prepared for the Government by Mr. John Lambert, of the Poor Law Board. The population of England and Wales has, since 1831, increased 44 per cent.; the electors, in nearly the same interval, increased 62 per cent.

(*a*) Parliamentary Cities and Boroughs—		
Total number of electors on the register, 1865-66, including double entries	514,026	
Total number on the register, 1832-33	282,398	
Increase	231,628	
Total number of freemen on the register, 1832-33	63,481	
" on the register, 1865-66	41,641	
Decrease		21,840
Total number of scot and lot voters, potwallers, and persons (other than freemen), possessing ancient-right qualifications reserved by 2 Will. 4, c. 45, on the register, 1832-33	44,738	
Total number of such electors on the register, 1865-66	8,837	
Decrease		35,901
Total decrease of freemen, scot and lot voters, &c.		57,741
(*b*) Counties—		
Total number of electors on the register, 1864-65		542,633
" " on the register, '32-33		369,887
Increase		172,746
(*c*) Total increase in the constituencies of England and Wales		404,374

MARRIAGES, BIRTHS, AND DEATHS IN THE UNITED KINGDOM.

No. I.—ENGLAND AND WALES.

MARRIAGES IN THE QUARTER ENDED 30TH SEPTEMBER, 1865, AND BIRTHS AND DEATHS IN THE QUARTER ENDED 31ST DECEMBER, 1865.

The United Kingdom.—The *Registers* of the *United Kingdom* show that 113,972 persons *married* in the quarter that ended in *September* last; that the *births* of 239,499 children, and the *deaths* of 159,524 persons of both sexes, were registered in the three months ending on *December* 31st. The recorded natural increase of population in 92 days was 79,975, or 869 daily. Exclusive of 8,101 foreigners, 36,256 emigrants sailed from these islands in the same period. So about 394 emigrants left daily; and allowing for defects in registration, which has only recently been established in Ireland, the increase at home has been about 520 daily.

The death-rate of the United Kingdom differs little from the average of England and Wales to be here discussed. The several facts concerning the other divisions of the kingdom are fully set forth in the reports of the Registrar-General of Scotland and the Registrar-General of Ireland.

ENGLAND:—MARRIAGES, BIRTHS, *and* DEATHS, *returned in the Years* 1859-65, *and in the* QUARTERS *of those Years.*

Calendar YEARS, 1859-65:—*Numbers.*

Years.........	'65.	'64.	'63.	'62.	'61.	'60.	'59.
Marriages No.	—	180,263	173,510	164,030	163,706	170,156	167,723
Births........ „	747,870	739,763	727,417	712,684	696,406	684,048	689,881
Deaths........ „	491,360	495,520	473,837	436,566	435,114	422,721	440,781

QUARTERS *of each Calendar Year*, 1859-65.

(I.) MARRIAGES:—*Numbers.*

Qrs. ended last day of	'65.	'64.	'63.	'62.	'61.	'60.	'59.
March ....No.	36,835	37,948	35,528	33,953	33,274	35,150	35,382
June .... „	45,772	44,596	44,146	40,853	42,012	43,777	42,042
Septmbr...... „	45,863	44,650	41,932	40,600	39,884	40,541	39,803
Decmbr. ..... „	—	53,069	51,904	48,624	48,536	50,688	50,496

QUARTERS *of each Calendar Year,* 1859–65.

(II.) BIRTHS:—*Numbers.*

Qrs. ended last day of	'65.	'64.	'63.	'62.	'61.	'60.	'59.
March ....No.	194,287	192,926	186,341	181,990	172,933	183,180	175,532
June .... „	192,921	188,641	189,340	185,554	184,820	174,028	175,864
Septmbr..... „	181,642	180,752	173,439	172,709	172,033	164,121	168,394
Decmbr. .... „	179,020	177,444	178,297	172,431	166,620	162,719	170,091

(III.) DEATHS:—*Numbers.*

Qrs. ended last day of	'65.	'64.	'63.	'62.	'61.	'60.	'59.
March ....No.	140,646	143,030	128,096	122,019	121,215	122,617	121,580
June .... „	116,006	116,899	118,121	107,392	107,558	110,869	105,631
Septmbr..... „	113,404	112,133	112,504	92,381	101,232	86,312	104,216
Decmbr. .... „	121,304	123,458	115,116	114,774	105,109	102,923	109,354

The estimated population in 1865 of England, Scotland, and Ireland, is 29,772,294. The corrected death-rate of the quarter is 2·220 per cent.

England.—This Return comprises the BIRTHS and DEATHS registered by 2,200 Registrars in all the districts of England during the autumn quarter that ended on December 31st, 1865; and the MARRIAGES in 12,811 churches or chapels, about 5,302 registered places of worship unconnected with the Established Church, and 641 Superintendent Registrars' offices, in the quarter that ended on September 30th, 1865.

A few fatal cases of epidemic cholera occurred during the quarter in the districts of Southampton and of Portsea Island on the southern coast of England; there was also a slight outbreak in Epping; but the number of deaths by cholera has been inconsiderable, and the epidemic has left no traces.

The mortality was above the average, but it was below that in the corresponding quarter of the previous year. The birth-rate was above the average.

The marriage returns are for the quarter ending in September, 1865. The rate was much above the average. Weddings were more rife than they were in the previous summer, or in the summer of any year since registration began. This implies that the great body of the people were prosperous.

MARRIAGES.—91,726 persons married in the quarter that ended on September 30th, 1865. The rate of marriage was 1·732, or 0·127 above the average.

The increase of marriages was general, but it was most striking in Yorkshire, where the woollen trade flourished in an extraordinary degree; Lancashire was also recovering from its depression. In London the marriages exceeded by nearly a thousand the marriages in the summer quarter of 1863.

BIRTHS.—179,020 births were registered in the last quarter of the year 1865. The birth-rate was 3·370, or ·073 above the average. The daily births were 1,946, or 81 per hour. The number has varied little in the last three summers in any of the divisions.

INCREASE OF POPULATION.—As the births were 179,020, the deaths 121,304, the natural increase of population was 57,716 in 92 days, or upon an average 627 daily.

ENGLAND:—*Annual Rates per Cent. of* PERSONS MARRIED, BIRTHS, *and* DEATHS, *during the* YEARS 1859-65, *and the* QUARTERS *of those Years.*

Calendar YEARS, 1859-65:—*General Percentage Results.*

YEARS	'65.	Mean '55-'64.	'64.	'63.	'62.	'61.	'60.	'59.
Estmtd. Popln. of England *in thousands* in middle of each Year....	20,991	—	20,772	20,554	20,336	20,119	19,903	19,687
Persons Married Per ct.	—	1·663	1·736	1·688	1·614	1·628	1·710	1·704
Births .... ,,	3·563	3·464	3·561	3·539	3·504	3·461	3·437	3·504
Deaths.... ,,	2·341	2·216	2·385	2·305	2·147	2·163	2·124	2·239

QUARTERS *of each Calendar Year,* 1859-65.

(I.) PERSONS MARRIED:—*Percentages.*

Qrs. ended last day of	'65.	Mean '55-'64.	'64.	'63.	'62.	'61.	'60.	'59.
March....Per ct.	1·428	1·381	1·472	1·408	1·360	1·346	1·422	1·464
June....... ,,	1·752	1·687	1·724	1·726	1·614	1·678	1·766	1·716
Septmbr. ,,	1·732	1·605	1·704	1·616	1·582	1·570	1·614	1·602
Decmbr. ,,	—	1·963	2·020	1·996	1·890	1·906	2·012	2·026

(II.) BIRTHS:—*Percentages.*

Qrs. ended last day of	'65.	Mean '55-'64.	'64.	'63.	'62.	'61.	'60.	'59.
March....Per ct.	3·768	3·627	3·740	3·691	3·644	3·500	3·707	3·631
June .... ,,	3·691	3·603	3·647	3·700	3·665	3·690	3·512	3·588
Septmbr. ,,	3·429	3·325	3·447	3·343	3·365	3·388	3·267	3·389
Decmbr. ,,	3·370	3·297	3·376	3·428	3·350	3·272	3·230	3·414

(III.) DEATHS:—*Percentages.*

Qrs. ended last day of	'65.	Mean '55-'64.	'64.	'63.	'62.	'61.	'60.	'59.
March ...Per ct.	2·728	2·522	2·773	2·538	2·443	2·453	2·481	2·515
June .... ,,	2·220	2·191	2·260	2·308	2·121	2·147	2·237	2·155
Septmbr. ,,	2·141	1·972	2·139	2·169	1·800	1·994	1·718	2·097
Decmbr. ,,	2·284	2·180	2·349	2·213	2·230	2·064	2·043	2·195

About 15,367 emigrants of English origin sailed in the 92 days from the ports of the United Kingdom, at which there are emigration officers; 7,833 sailed to the United States, 823 to the American Colonies, 5,518 to Australia, and 1,193 to other places; on an average 167 English emigrants left the country daily.*

PRICES, PAUPERISM, AND THE WEATHER.—The price of wheat is rising. It was 38*s*. 5*d*. a quarter in the last three months of 1864, and 44*s*. 10*d*. a quarter in the last three of 1865. The rise is nearly 17 per cent. on the low price of 1864. Beef by the carcase in London was on an average 5⅝*d*. per lb.; about ⅛*d*. below the price of the corresponding season of 1864; and a halfpenny a pound dearer than it was in the autumn of 1863. The mean of the quoted prices of beef ranged from 4¼*d*. to 7*d*. a pound; mutton from 5½*d*. to 8¼*d*. in the last three months. The average price of mutton in the last three autumns was 6*d*., 6¼*d*., and 6⅞*d*. a pound. The rise in the price of beef was 10 per cent., of mutton 15 per cent., in two years. This was partly the result of panic, and of interference with the supply of the markets, as the destruction of stock had not been considerable when the prices rose; and the rise itself was anticipated and augmented by the extra profits of the butchers.

CONSOLS, PROVISIONS, PAUPERISM, *and* TEMPERATURE, *in each of the Nine* QUARTERS *ended* 31*st December*, 1865.

1	2	3	4	5	6	7	8	9
Quarters ending	Average Price of Consols (for Money).	Average Price of Wheat per Quarter in England and Wales.	Average Prices of Meat per lb. at Leadenhall and Newgate Markets (by the Carcase), with the *Mean* Prices.		Average Prices of Potatoes (York Regents) per Ton at Waterside Market, Southwark.	Pauperism. Quarterly Average of the Number of Paupers relieved on the *last day* of each week.		Mean Temperature.
			Beef.	Mutton.		In-door.	Out-door.	
	£	*s.* *d.*	*d. d. d.*	*d. d. d.*	*s. s. s.*			°
1863 31 Dec.	92⅞	40 6	4—6¼ 5⅛	5—7 6	60—80 70	130,072	804,941	46·8
1864 31 Mar.	91	40 4	4½—6½ 5⅛	5½—7 6¼	55—70 62	139,606	855,728	37·9
30 June	91⅜	39 7	4¼—6¼ 5¼	5¼—7 6⅛	40—60 50	122,717	785,825	53·1
30 Sept.	89⅛	42 3	4½—6½ 5⅛	5½—7 6¼	80—120 100	115,698	739,341	59·4
31 Dec.	89⅝	38 5	4½—7 5⅝	5¼—7¼ 6¼	80—95 87	128,322	771,879	43·7
1865 31 Mar.	89⅞	38 4	4½—7 5¾	5¼—7¼ 6¼	85—97 91	142,329	813,371	36·5
30 June	90⅝	40 6	4¾—6¾ 5¾	6¼—8½ 7⅜	90—115 102	125,846	776,016	56·2
30 Sept.	89⅝	43 3	4½—7 5¾	6¼—8¾ 7⅛	65—100 85	117,172	719,589	62·5
31 Dec.	88⅜	44 10	4¼—7 5⅛	5½—8¼ 6⅞	60—90 75	129,036	725,259	46·0

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* Return with which the Registrar-General has been favoured by the Emigration Commissioners: of 44,357 emigrants the origin was undistinguished in 2,296 cases, which have been distributed by calculation.

The best potatoes at the Waterside Market, Southwark, sold at prices ranging from 60*s*. to 90*s*. a ton; from 3*s*. to 4*s*. 6*d*. the hundredweight. The prices are much lower than they were in the autumn of 1864.

On an average 129,036 paupers received complete relief in the workhouses; 725,259 paupers out of doors received relief sufficient to supply some of their wants, but not enough for subsistence. The numbers relieved in the workhouses scarcely varied; the numbers out of doors fell from 804,941 to 771,879, and to 725,259 in the last three autumnal quarters.

The temperature of the quarter was 46° Fahrenheit, equal to 8° centigrade.

The autumnal season was characterized by high temperature, storms, and a heavy rain-fall. The mean temperature of the air at Greenwich Observatory was 2·3° above the average of the season. The temperature of December there, was nearly as high as that of November; its mean temperature was 3·4° above the average of 94 Decembers. The rain fall on 47 days was 9·2 inches at the Royal Observatory, or 2·1 inches above the average. The excess of rain fell in October, when the fall was 5·9 inches; in December the fall was only 0·9 inch, or full an inch below the average.

The rain-fall determines to some extent the water supply, and the excess in October made up the deficiency in the early part of the year. The rain fall depends upon a great number of conditions, and consequently varies in every part of the country. Thus 20·2 inches of rain fell at Allenheads, 19·1 at Truro, and only 5·8 inches at Liverpool Observatory. The average rain-fall at Mr. Glaisher's 50 stations was 11·4 inches; which is equivalent to 1,151 tons of rain per acre, or to 42,961 million tons on the whole area of England and Wales. If the country ever suffers from the want of water, it is from defective storage or defective distribution. In the mountainous regions the annual rain-fall in some places has been found to amount to 190 inches; it would be a great advantage to get the water of the hills unpolluted for the supply of men and domestic animals in the plains.

DEATHS; AND THE STATE OF THE PUBLIC HEALTH.—The threats which were held over our heads of a new form of fever, the invasion of two points of the southern coast by epidemic cholera, which has ravaged the continent, and the prevalence of cattle plague all over England, led us to await the result of the returns with some anxiety.

Average Annual Rate of Mortality to 1,000 *of the Population in the Eleven Divisions of England in the Ten Years* 1851-60; *in the Autumn Quarter of* 1864; *in the Year* 1865; *and in the Winter, Spring, Summer, and Autumn Quarters of* 1865.

Divisions.	Average Annual Rate of Mortality to 1,000 Living in						
	Ten Years, 1851-60.	1864.	1865.				
		Autumn Quarter.	Year.	Winter Quarter.	Spring Quarter.	Summer Quarter.	Autumn Quarter.
I. London	23·63	26·12	24·40	28·46	23·16	21·91	24·05
II. South-Eastern counties	19·55	19·37	20·40	24·25	18·82	19·07	19·44
III. South Midland „	20·44	22·66	21·56	25·39	20·02	20·02	20·79
IV. Eastern counties	20·58	20·86	21·06	24·47	20·40	19·75	19·60
V. South-Western counties	20·01	20·67	20·42	25·20	20·53	17·14	18·81
VI. West Midland „	22·35	23·77	22·18	27·15	20·23	19·46	21·89
VII. North Midland „	21·10	20·75	21·81	25·73	20·52	20·43	20·55
VIII. North-Western „	25·51	26·34	27·38	30·25	24·69	25·64	28·93
IX. Yorkshire	23·09	25·00	25·71	28·01	24·83	25·18	24·86
X. Northern counties	21·99	22·46	23·70	26·26	22·63	22·86	23·03
XI. Monmouthshire and Wales	21·28	23·59	23·36	29·51	24·75	18·74	20·41

It is gratifying under these circumstances to find that the mortality has been lower than it was in the autumn of 1864, and has been only ·104 above the autumnal average.

121,304 deaths were registered in the quarter, and the mortality was at the rate of 2·284 per cent. annually.

In the districts of the chief towns the mortality was at the rate of 2·564 per cent., or ·134 above the average.

The mortality in the country districts was, as usual, lower than the mortality in the town districts; it was at the rate of 1·927 per cent., and only ·042 above the average of those districts.

Thus the rate of mortality in the country districts was about 19, in the town districts nearly 26, and in the kingdom generally nearly 23 per 1,000 living.

The mortality was lowest in the south-western counties (19), highest in the north-western counties (29); thus the annual rate was 10 per thousand higher in Lancashire and Cheshire round the Mersey than it was in the counties between the Bristol Channel and the channel which divides England from France.

It is gratifying to find that the mortality rate of London (24) is lower by 2 in 1,000 than it was (26) in the autumn quarter of the previous year.

The mortality has been excessively high through the year in prosperous Yorkshire; it is still 2 above the county average (23), but it is somewhat lower than it was in the autumn of the previous year.

As a general rule the mortality has been higher than the average in the counties north of the Dee and of the Humber, and lower than the average in the counties of Wales and of the midland and southern region of England, around the basins of the Severn, Trent, and Thames.

ANNUAL RATE *of* MORTALITY *per Cent. in* TOWN *and* COUNTRY DISTRICTS *of* ENGLAND *in each Quarter of the Years* 1865-63.

	Area in Statute Acres.	Population Enumerated.		Quarters ending	Annual Rate of Mortality per Cent. in each Quarter of the Years			
		1851.	1861.		1865.	Mean '55-64.	1864.	1863.
In 142 Districts, and 56 Sub-districts, comprising the *Chief Towns*	3,287,151	9,155,964	10,930,841	March	2·881	2·703	2·974	2·706
				June....	2·339	2·324	2·369	2·470
				Sept. ..	2·387	2·192	2·374	2·410
				Dec.....	2·564	2·430	2·601	2·422
				Year	2·543	2·412	2·580	2·502
In the remaining Districts and Sub-districts of England and Wales, comprising chiefly *Small Towns* and *Country Parishes*	34,037,732	8,771,645	9,135,383	Year	2·080	1·987	2·116	2·057
				March	2·514	2·313	2·508	2·323
				June...	2·049	2·037	2·110	2·109
				Sept. ..	1·828	1·714	1·831	1·862
				Dec.....	1·927	1·885	2·015	1·944

Note.—The three months January, February, March, contain 90, in leap year 91 days; the three months April, May, June, 91 days; each of the last two quarters of the year 92 days. For this inequality a correction has been made in the calculations, also for the difference between 365 and 365·25 days, and 366 and 365·25 days in leap year.

The great towns of the United Kingdom may be arranged thus in the order of the autumnal mortality rate per 1,000: Bristol 24, London 24, Dublin 26, Birmingham 26, Edinburgh 29, Hull 29, Leeds 33, Salford 34, Manchester 36, Glasgow 40, Liverpool 41. The mortality in 63 of the country districts was 18 during the same season.

It is sad to see this great sacrifice of human life in so many of our large towns where the productive industry of the country is most active, and where the science of the country is applied to almost every purpose, except the maintenance of the hygienic conditions on which men can live in health.

It is satisfactory to observe at the same time traces of dawning light. London has undertaken great sewage works; Manchester is already supplied with abundance of water; and we may hope to see ere long a generous rivalry in our cities in the race of improvement. When pure water on the constant supply system is brought to every house, and the dirt in cesspools, which is the source of zymotic disease, is carried away to fructify the soil, the municipal authorities will have laid the solid foundations of the sanitary edifice. The inspection of articles of food by health officers, measures for the regulation of lodging-houses or of any of the houses in which fever is generated, and several other duties they may also undertake; but after all this is done, the crowning success must be achieved by the people themselves. Temperance, self-control, and skill in protecting themselves and their children from evil are every day called into requisition. The preservation of life depends upon careful attention to small things, and should be taught as a part of common education.

Mr. Leigh's able Sanitary Report on Manchester shows how much has been done, and how much remains to be done, in that city (see pp. 31, 32). It is to be regretted that Manchester has yet no health officer, but it is indebted to the Statistical and the Sanitary Societies for the publication of much valuable practical information.

POPULATION; BIRTHS, DEATHS; MEAN TEMPERATURE *and* RAINFALL *in last Autumn Quarter, in Eleven Large Towns.*

Cities, &c.	Estimated Population in the Middle of the Year 1865.	Births in 13 Weeks ending 30th Dec., 1865.	Deaths in 13 Weeks ending 30th Dec., 1865.	Annual Rate to 1,000 Living during the 13 Weeks ending 30th Dec., 1865.		Mean Temperature in 13 Weeks ending 30th Dec., 1865.	Rainfall in Inches in 13 Weeks ending 30th Dec., 1865.
				Births.	Deaths.		
Total of 11 large towns....	5,586,870	51,212	39,773	36·12	28·05	45·3	8·8
London	3,015,494	26,544	18,393	35·33	24·05	46·0	9·2
Liverpool (borough)	476,368	4,758	4,861	40·09	40·96	47·5	5·8
Manchester (city)	354,930	3,172	3,156	35·87	35·69	43·7	8·5
Salford (borough)	110,833	1,008	949	36·50	34·37	45·3	8·1
Birmingham (borough)....	327,842	3,210	2,145	39·30	26·26	45·2	8·4
Leeds (borough)........	224,025	2,379	1,841	42·62	32·98	44·8	8·1
Bristol (city)	161,809	1,450	967	35·97	23·99	46·2	11·6
Hull (borough)	103,747	972	754	37·60	29·17	—	—
Edinburgh (city)	174,180	1,492	1,254	34·38	28·90	43·4	5·8
Glasgow (city)	423,723	4,201	3,434	39·79	39·53	43·9	12·4
Dublin (city and some suburbs)	317,666	2,026	2,019	25·60	25·51	46·6	10·0

England: — **Marriages** *Registered in Quarters ended 30th September*, 1865-63; *and* **Births** *and* **Deaths** *in Quarters ended* 31st *December*, 1865-63.

1	2	3	4	5	6
DIVISIONS. (England and Wales.)	Area in Statute Acres.	Population, 1861. (*Persons.*)	Marriages in Quarters ended 30th September.		
			'65.	'64.	'63.
		No.	No.	No.	No.
Engld. & Wales....*Totals*	37,324,883	20,066,224	45,863	44,650	41,932
I. London	77,997	2,803,989	8,982	8,546	8,029
II. South-Eastern	4,065,935	1,847,661	3,696	3,690	3,508
III. South-Midland	3,201,290	1,295,515	2,334	2,196	2,157
IV. Eastern	3,214,099	1,142,562	1,851	1,695	1,659
V. South-Western	4,993,660	1,835,714	3,374	3,262	3,206
VI. West Midland	3,865,332	2,436,568	5,307	5,336	5,064
VII. North Midland........	3,540,797	1,288,928	2,356	2,440	2,251
VIII. North-Western	2,000,227	2,935,540	7,644	7,599	7,001
IX. Yorkshire	3,654,636	2,015,541	5,070	4,806	4,384
X. Northern	3,492,322	1,151,372	2,734	2,467	2,292
XI. Monmthsh. & Wales	5,218,588	1,312,834	2,515	2,613	2,381

7	8	9	10	11	12	13
DIVISIONS. (England and Wales.)	Births in Quarters ended 30th December.			Deaths in Quarters ended 30th December.		
	'65.	'64.	'63.	'65.	'64.	'63.
	No.	No.	No.	No.	No.	No.
Engld. & Wales....*Totals*	179,020	177,444	178,297	121,304	123,458	115,116
I. London	26,544	25,567	25,461	18,393	19,636	17,732
II. South-Eastern	15,577	15,194	15,517	9,595	9,441	9,255
III. South Midland........	10,772	10,736	11,074	6,942	7,530	6,958
IV. Eastern	8,925	9,215	9,191	5,711	6,063	6,016
V. South-Western	14,162	14,248	14,565	8,775	9,625	9,708
VI. West Midland	22,284	22,310	22,109	14,284	15,307	13,258
VII. North Midland........	10,853	10,949	11,212	6,858	6,886	7,063
VIII. North-Western........	27,624	27,170	27,356	23,097	20,683	19,542
IX. Yorkshire	19,545	19,454	19,511	13,340	13,255	12,437
X. Northern	11,639	11,572	11,374	7,234	6,936	6,562
XI. Monmthsh. & Wales	11,095	11,029	10,927	7,075	8,096	6,585

REMARKS ON THE WEATHER

DURING THE QUARTER ENDING 31ST DECEMBER, 1865.

By JAMES GLAISHER, ESQ., F.R.S., *&c., Sec. of the British Meteorological Society.*

The remarkable fine and dry weather which had prevailed in September, continued during the first week in October; the barometer reading during this time was about 30 in.; at the beginning of the second week there were indications of a change, the temperature fell, and the barometer reading decreased on the 12th day to nearly 29 in., then decreased rapidly to 29·9 in. by the 15th, and decreased to below 29 in. by the 18th day; from this time rain fell very heavily, and heavy gales of wind were experienced; the weather continued stormy to the end of the month, rain falling in abundance. At the beginning of November there were frequent gales, and much stormy weather; at about the 10th day the weather assumed the aspect of a more settled character, the barometer reading ascended above the average, and was nearly 30·4 in. on the 12th; from the 17th to the 22nd the barometer reading decreased very rapidly, and was 28·8 in. on the latter mentioned day, this was accompanied by a fearful gale, acting with ruinous effects on both land and sea. The reading of the barometer was very unsettled during the remainder of the month. The month of December opened with light S.E. winds, the air was mild and warm. The barometer reading increased by the 11th day to 30·8 in. About the middle of the month trees budded and daisies were in blossom. Towards the end of the month the barometer decreased quickly till it was 29·0 in. by the 29th. Frequent and violent gales occurred, causing many shipwrecks. The force of the wind on the last day reached 24 lbs. on the square foot, both at Greenwich and at Liverpool. The temperature during the whole quarter, with the exception of a few days about the middle of October, the beginning of November, and the middle of December, was in excess of the average, to the daily amount of 1¾°.

The mean temperature of October was 50°·9, being 0°·4 above the average of the preceding 24 years, and of the same value as last year.

The mean temperature of November was 44°·8, being 0°·8 below the average of the preceding 24 years, and 2°·8 above that of 1864.

The mean temperature of December was 42°·4, being 2°·1 above the average of the preceding 24 years, and 3°·9 higher than in 1864.

The temperature of the air decreased from September to October by 7° or 8° at Guernsey and Devonshire, but by 10° to 13° at all other parts of the country. November was colder than October by 6° or 7°, and the decrease from November to December was from 1° to 2° only; in some northern places December was even warmer than November.

The mean high day temperatures in the months of October, November, and December were 60°, 50°·8, and 46°·7, being 1°·3, 1°·7, and 1°·5 *above* their respective averages.

The mean low night temperatures were 43°·7, 38°·7, and 38°·1 respectively in these three months.

The fall of rain in October was 5·9 in., and in the quarter 9½ in. The fall for the whole year was 29 in., being about 3½ in. in excess of the average.

The mean temperature of the air at Greenwich in the three months ending November, constituting the three autumn months, was 53°·2, being 3°·3 above the average of the preceding 94 years.

1865. Months.	Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
	Air.			Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames				
	Mean.	Diff. from Average of 94 Years.	Diff. from Average of 24 Years.	Mean.	Diff. from Average of 24 Years.	Mean.	Diff. from Average of 24 Years.	Mean.	Diff. from Average of 24 Years.		Mean.	Diff. from Average of 24 Years.	Mean.	Diff. from Average of 24 Years.
	°	°	°	°	°	°	°	°	°	°	In.	In.	Gr.	Gr.
Oct.	50·9	+1·2	+0·4	49·0	+0·5	47·0	+0·7	16·3	+1·7	55·4	·323	+·007	3·6	−0·1
Nov.	44·8	+2·4	+0·8	43·2	+1·6	41·4	+1·5	12·1	+0·4	43·9	·261	+·009	3·0	+0·2
Dec.	42·4	+3·4	+2·1	41·0	+2·2	39·4	+2·4	8·6	−1·0	43·2	·241	+·019	2·8	+0·2
Mean......	46·0	+2·3	+1·1	44·4	+1·4	42·6	+1·5	12·3	+0·4	47·5	·275	+·012	3·1	+0·1

1865. Months.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal Movement of the Air.	Reading of Thermometer on Grass.				
										Number of Nights it was			Lowest Reading at Night.	Highest Reading at Night
	Mean.	Diff. from Average of 24 Years.	Mean.	Diff. from Average of 24 Years.	Mean.	Diff. from Average of 24 Years.	Amnt.	Diff. from Average of 50 Years.		At or below 30°.	Between 30° and 40°.	Above 40°.		
			In.	In.	Gr.	Gr.	In.	In.	Miles.				°	°
Oct.	87	0	29·440	−·256	533	− 6	5·9	+3·1	227	4	15	12	25·3	50·7
Nov.	88	− 1	29·720	−·029	546	− 2	2·4	0·0	265	8	14	8	24·0	46·9
Dec.	89	+ 1	30·056	+·233	554	− 2	0·9	−1·0	221	5	23	3	24·2	47·7
Mean......	88	0	29·739	−·017	544	− 2	Sum 9·2	Sum +2·1	Mean 238	Sum 17	Sum 52	Sum 23	Lowest 24·0	Highst 50·7

Note.—In reading this table it will be borne in mind that the sign (−) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning was seen on October 8th at Osborne, Brighton, and Marlborough; on the 10th at Wilton; on the 11th at Hawarden; on the 17th at Abington and Grantham; on the 24th at Helston and Stonyhurst; on the 25th at Truro and Clifton; on the 26th at Helston and Osborne; on the 27th at Eccles; on the 29th at Truro, Clifton, and Allenheads; and on the 30th at Brighton. On 21st November at Guernsey, and on the 24th at Truro. On 19th December at Stonyhurst; and on the 31st at Guernsey.

Thunder was heard but lightning was not seen on 8th October at Guernsey and Battersea; on the 9th at Guernsey; on the 11th at Wisbeach; on the 17th at Wisbeach and Belvoir; on the 27th at Helston, Clifton, and Stonyhurst; and on the 30th at Oxford and Lampeter. On 22nd November at Lampeter; on the 25th at Guernsey and Lampeter; on the 26th at Holkham; and on the 31st at Guernsey.

ENGLAND:—*Meteorological Table, Quarter ended* 31*st December*, 1865.

1 NAMES OF STATIONS.	2 Mean Pressure of Dry Air reduced to the Level of the Sea.	3 Highest Reading of the Thermometer.	4 Lowest Reading of the Thermometer.	5 Range of Temperature in the Quarter.	6 Mean Monthly Range of Temperature.	7 Mean Daily Range of Temperature.	8 *Mean Temperature of the Air.*	9 Mean Degree of Humidity.
	in.	°	°	°	°	°	°	
Guernsey	29·595	71·5	35·0	36·5	23·8	7·8	50·6	85
Ventnor	29·663	71·0	33·0	38·0	23·7	7·8	50·4	81
Barnstaple	29·579	75·5	27·5	48·0	31·2	12·1	48·8	83
Royal Observatory	29·646	71·7	29·2	42·5	29·0	12·3	46·0	88
Royston	29·663	75·3	28·8	46·5	30·9	12·5	45·4	88
Lampeter	29·611	74·4	23·4	51·0	35·3	12·8	46·2	82
Diss (Norfolk)	29·675	76·5	26·5	50·0	33·5	14·9	46·0	79
Derby	29·604	70·0	27·0	43·0	31·7	11·3	45·9	84
Liverpool	29·631	68·6	34·7	33·9	24·1	8·4	47·5	80
Wakefield	29·623	70·7	24·2	46·5	37·5	15·0	44·8	87
Stonyhurst	29·569	65·7	26·6	39·1	31·2	11·7	44·5	86
North Shields	29·634	61·0	30·0	31·0	25·3	9·3	43·8	89

10	11	12	13	14	15	16	17	18
	WIND.						RAIN.	
NAMES OF STATIONS.	Mean estimated Strength.	Relative Proportion of				Mean Amount of Cloud.	Number of Days on which it fell.	Amount collected.
		N.	E.	S.	W.			in.
Guernsey	1·6	6	7	10	8	5·7	49	17·5
Ventnor	—	8	7	8	8	—	50	14·5
Barnstaple	1·3	7	7	10	7	3·0	53	12·1
Royal Observatory	0·4	6	5	11	9	6·9	47	9·2
Royston	—	5	5	12	9	6·0	60	9·7
Lampeter	0·8	5	9	10	7	6·3	53	15·0
Diss (Norfolk)	—	6	7	11	7	6·4	—	9·7
Derby	—	4	10	5	12	—	46	7·9
Liverpool	1·3	6	8	10	7	6·3	43	5·8
Wakefield	1·5	6	6	9	10	6·8	54	8·1
Stonyhurst	0·6	9	7	7	8	7·6	52	12·4
North Shields	1·6	7	5	9	10	5·8	61	10·5

II.—SCOTLAND.

MARRIAGES, BIRTHS, AND DEATHS IN THE QUARTER ENDED 31ST DECEMBER, 1865.

This Return comprises the BIRTHS, DEATHS, and MARRIAGES registered during the quarter ending the 31st December, 1865, in the 1,011 Districts into which Scotland is divided for the purposes of Registration. From these returns it would appear that the Births, Deaths, and Marriages during the quarter have been considerably above the average of the ten previous years.

BIRTHS.—26,866 births were registered in Scotland during the quarter ending the 31st December, 1865, being in the annual proportion of 342 births in every 10,000 persons of the estimated population. This is greatly above the average birth-rate of the fourth quarter of the ten previous years, which only indicates a proportion of 337 Births annually in every 10,000 persons. The births in England during the same quarter have also been above their average; for 179,020 Births were registered in England during the fourth quarter, yielding a proportion of 337 births in every 10,000 persons, the average of the quarter for the ten previous years being 329 births in a like population.

The town and rural districts exhibited the usual difference in the proportion of their births. Thus, in the 126 town districts (which embrace all the towns with populations of 2,000 and upwards), 15,614 births were registered; while in the 885 rural districts (embracing the remainder of the population of Scotland), only 11,252 births occurred; thus indicating an annual proportion of 373 births in every 10,000 persons in the town districts, but only 307 births, in a like population in the rural districts.

TABLE I.—*Proportion of Illegitimate in every Hundred Births in the Divisions and Counties of Scotland, during the Quarter ending* 31*st December*, 1865.

Divisions.	Per Cent. of Illegitimate.	Counties.	Per Cent. of Illegitimate.	Counties.	Per Cent. of Illegitimate.	Counties.	Per Cent. of Illegitimate.
SCOTLAND	10·0						
Northern	7·6	Shetland	6·0	Forfar	11·4	Lanark	8·8
		Orkney	5·2	Perth	10·6	Linlithgow	9·9
North-Western	5·5	Caithness	11·1	Fife	7·7	Edinburgh	9·1
North-Eastern	16·5	Sutherland	6·4	Kinross	1·9	Haddington	12·0
East Midland	10·0	Ross and Cromarty	4·1	Clackmannan	9·4	Berwick	10·7
West Midland	6·8	Inverness	7·0	Stirling	6·9	Peebles	9·0
		Nairn	13·3	Dumbarton	6·6	Selkirk	9·2
South-Western	8·6	Elgin	14·6	Argyll	7·3	Roxburgh	11·4
South-Eastern	9·5	Banff	17·9	Bute	4·1	Dumfries	16·0
		Aberdeen	16·7	Renfrew	6·9	Kirkcudbright	15·7
Southern	15·1	Kincardine	16·0	Ayr	9·5	Wigtown	17·8

Of the 26,866 children born during the quarter, 24,178 were legitimate, and 2,688 illegitimate, being in the proportion of one illegitimate in every 9·9 births, or 10 per cent. of all the births illegitimate. The proportion of illegitimate births was, as usual, lowest in the town and highest in the rural districts, only 9·6 per cent. of the births being illegitimate in the towns, but 10·5 per cent. in the rural districts. Table I exhibits the proportion of illegitimate births in the several divisions and counties of Scotland, and generally accords with previous returns, the counties embraced in the north-eastern and southern divisions of Scotland, showing, as they have always done, the highest proportion of illegitimate births. Thus, while the north-western division had only 5·5 per cent. of illegitimate children, and the great mining and manufacturing south-western division 8·6 per cent., the southern division had 15·1 per cent., and the north-eastern 16·5 per cent. of illegitimate births.

Of the children born during the quarter, 13,905 were males, and 12,961 females, being in the proportion of 107·2 males at birth for every 100 females. 9,279 births were registered during October, 8,763 during November, and 8,824 during December.

DEATHS.—17,062 deaths were registered in Scotland during the fourth quarter of 1865, being in the annual proportion of 217 deaths in every 10,000 persons of the estimated population. This is a death-rate very much higher than the average of the quarter during the ten previous years, which was only at the rate of 207 deaths annually in every 10,000 persons. High as the death-rate for Scotland has been, however, it has not been so high as that of England. During the fourth quarter of 1865 there died in England 121,304 persons, being at the rate of 228 deaths in every 10,000 persons, the average of the quarter during the ten preceding years having been only 218 deaths in a like population. The increased proportion of deaths above their respective averages has therefore been to the same amount in England and Scotland during the past quarter.

TABLE II.—*Number of Births, Deaths, and Marriages in Scotland, and in the Town and Country Districts during the Quarter ending* 31*st December*, 1865, *and their Proportion to the Population; also the Number of Illegitimate Births, and their Proportion to the Total Births.*

	Population.		Total Births.			Illegitimate Births.		
	Census, 1861.	Estimated, 1865.	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every
SCOTLAND	3,062,294	3,136,057	26,866	3·42	29	2,688	10·0	9·9
126 town districts	1,603,875	1,672,210	15,614	3·73	26	1,500	9·6	10·4
885 rural "	1,458,419	1,463,847	11,252	3·07	32	1,188	10·5	9·4

	Population.		Deaths.			Marriages.		
	Census, 1861.	Estimated, 1865.	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every
SCOTLAND	3,062,294	3,136,057	17,062	2·17	45	7,187	0·91	109
126 town districts	1,603,875	1,672,210	11,145	2·66	37	4,258	1·01	98
885 rural "	1,458,419	1,463,847	5,917	1·63	61	2,879	0·78	127

The deaths in the town districts, as usual, greatly exceeded in proportion those in the rural districts. Thus, in the 126 town districts, 11,145 deaths were registered, but only 5,917 in the rural districts; thus indicating an annual proportion of 266 deaths in every 10,000 persons in the town districts, but only a proportion of 163 deaths in a like population in the rural districts.

Of the deaths 5,368 were registered in October, 6,023 in November, and 5,671 in December, being at the rate of 173 deaths daily during October, 201 daily during November, and 183 daily during December.

Increase of the Population.—As the births numbered 26,866 during the quarter, and the deaths 17,062, the natural increase of the population by births was 9,804. From that number ought to be deducted all the emigrants. From a return furnished to the Registrar-General by the Emigration Commissioners, it would appear that, during the fourth quarter of the year 1865, there emigrated

Number of Births, Deaths, and Marriages in Scotland, and their Proportion to the
1865 *to* 1856

	1865.		1864.		1863.		1862.		1861.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
1st Quarter—										
Births	28,608	3·65	28,177	3·61	26,729	3·44	27,089	3·51	25,400	3·30
Deaths	20,786	2·65	22,576	2·89	19,227	2·47	19,420	2·51	17,944	2·33
Marriages	5,407	0·69	5,333	0·68	5,090	0·65	4,763	0·62	4,636	0·61
Mean Temperature	35°·3		35°·7		40°·9		38°·8		38°·9	
2nd Quarter—										
Births	30,332	3·86	29,992	3·84	29,651	3·82	28,728	3·73	29,200	3·80
Deaths	17,066	2·17	18,445	2·36	17,947	2·31	17,385	2·25	15,947	2·07
Marriages	5,698	0·72	5,710	0·73	5,557	0·71	5,185	0·67	5,327	0·69
Mean Temperature	51°·5		49°·9		49°·0		49°·4		50°·6	
3rd Quarter—										
Births	27,320	3·48	27,063	3·47	26,362	3·40	25,783	3·34	26,146	3·41
Deaths	15,907	2·02	16,131	2·06	16,249	2·09	14,235	1·84	13,415	1·74
Marriages	5,335	0·68	4,993	0·64	4,863	0·62	4,570	0·59	4,480	0·59
Mean Temperature	57°·5		54°·5		53°·9		54°·4		56°·0	
4th Quarter—										
Births	26,866	3·42	27,213	3·49	26,583	3·42	25,469	3·30	26,263	3·42
Deaths	17,062	2·17	17,151	2·19	17,998	2·32	16,155	2·09	15,035	1·95
Marriages	7,137	0·91	6,639	0·85	6,577	0·84	6,079	0·78	6,453	0·84
Mean Temperature	43°·4		42°·0		43°·6		42°·0		42°·0	
Year—										
Population	3,136,057		3,118,701		3,101,345		3,083,989		3,065,633	
Births	113,126	3·60	112,445	3·60	109,325	3·52	107,069	3·47	107,009	3·48
Deaths	70,821	2·25	74,303	2·38	71,421	2·30	67,195	2·17	62,341	2·03
Marriages	23,577	0·75	22,675	0·72	22,087	0·71	20,597	0·66	20,896	0·68

from the ports of Great Britain and Ireland 44,357 persons, of whom 14,693 were English, 2,542 Scotch, 17,258 Irish, and 7,568 foreigners, while the origin of 2,296 persons was not distinguished. If 138 be allowed as the proportion of those whose origin was not distinguished, the total number of Scottish emigrants during the quarter would amount to 2,680 persons, and that number deducted from the excess of births over deaths, would leave 7,124 as the increase of the population during the quarter, making no allowance, however, for the large emigration to England, nor for drafts to the army, navy, and merchant shipping.

Marriages.—7,137 marriages were registered in Scotland during the quarter ending 31st December, being in the annual proportion of 91 marriages in every 10,000 persons of the population, or one marriage to every 109 persons. This is

Population, Estimated to the Middle of each Year, during each Quarter of the Years inclusive.

1860.		1859.		1858.		1857.		1856.		
Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	
										1st Quarter—
27,118	3·55	25,988	3·42	26,022	3·45	26,010	3·47	25,129	3·37	Births
20,223	2·65	17,102	2·25	17,321	2·29	16,684	2·22	16,018	2·15	Deaths
4,802	0·63	4,890	0·64	4,486	0·59	4,988	0·66	4,499	0·60	Marriages
36°·0		41°·0		38°·2		38°·1		37°·8		Mean Temperature
										2nd Quarter—
28,292	3·71	28,510	3·76	27,846	3·69	27,381	3·65	26,848	3·60	Births
18,182	2·38	15,653	2·06	15,657	2·07	15,526	2·07	14,684	1·97	Deaths
5,329	0·69	5,150	0·67	4,927	0·65	5,435	0·72	5,241	0·70	Marriages
48°·2		50°·1		50°·7		49°·9		48°·1		Mean Temperature
										3rd Quarter—
24,914	3·26	25,956	3·42	24,905	3·30	24,856	3·31	24,636	3·30	Births
13,875	1·82	13,340	1·76	14,012	1·85	14,713	1·96	12,861	1·72	Deaths
4,514	0·59	4,626	0·61	4,081	0·54	4,470	0·59	4,549	0·61	Marriages
53°·9		56°.4		56°·1		58°·0		54°·8		Mean Temperature
										4th Quarter—
25,305	3·31	26,089	3·44	25,245	3·34	25,168	3·35	25,208	3·38	Births
15,890	2·08	15,619	2·06	16,549	2·19	14,983	2·00	14,966	2·00	Deaths
6,580	0·86	6,535	0·86	6,161	0·81	6,476	0·86	6,451	0·86	Marriages
39°·7		39°·7		41°·4		46°·1		42°·1		Mean Temperature
3,049,277		3,031,921		3,014,565		2,997,210		2,979,855		*Year*— Population
105,629	3·46	106,543	3·51	104,018	3·45	103,415	3·45	101,821	3·41	Births
68,170	2·23	61,714	2·03	63,539	2·10	61,906	2·06	58,529	1·96	Deaths
21,225	0·69	21,201	0·69	19,655	0·65	21,369	0·71	20,740	0·69	Marriages

by far the highest proportion of marriages which has ever occurred during the fourth quarter in Scotland, the average of the ten previous years being only 84 marriages in every 10,000 persons, and the fourth quarter of the previous year being only at the rate of 85 marriages in a like population. This very high proportion of marriages speaks well for the general prosperity of the country, seeing it shows that there is no present want among the people, and that the demand for work of all kinds is such that more than the usual proportion of the inhabitants was induced to marry.

The marriages in the town districts, as usual, exceeded those in the rural districts. Thus, in the 126 town districts, 4,258 marriages were registered, while in the 885 rural districts only 2,879 marriages occurred. This indicates a proportion of 101 marriages in every 10,000 persons in the town districts, but only 78 marriages in an equal population in the rural districts.

Of the 7,137 marriages, 1,598 were registered in October, 2,268 in November, and 3,271 in December, giving the proportions of 72 marriages daily during each of the marriageable days of October, 103 daily during those of November, and 156 daily during those of December. For the strange partiality of the Scottish people for marrying on the last day of the year, reference must be had to the Eighth Detailed Annual Report of the Registrar-General, just published.

HEALTH OF THE POPULATION.—The health of the population was not good during the fourth quarter of the year 1865. Much sickness prevailed everywhere; and in addition to a large increase of all the ordinary diseases, the cold weather had the effect of increasing the epidemic of typhus and enteric fever, which has been prevalent over Scotland since October, 1863. Hooping-cough and Scarlatina were also extremely prevalent during the quarter, as were also bronchitis and other inflammatory affections of the respiratory organs. Both the mortality and prevalence of all these diseases diminished during December, in consequence of the much greater mildness of the weather than during the first half of November.

SCOTLAND:—MARRIAGES, BIRTHS, *and* DEATHS *Registered in the Quarter ended* 31*st December*, 1865.

1 DIVISIONS. (Scotland)	2 AREA in Statute Acres.	3 POPULATION, 1861. (*Persons.*)	4 Marriages.	5 Births.	6 Deaths.
		No.	No.	No.	No.
SCOTLAND .... *Totals*	19,639,377	3.062,294	7,137	26,866	17,062
I. Northern	2,261,622	130,422	252	889	445
II. North-Western........	4,739,876	167,329	247	1,203	619
III. North-Eastern	2,429,594	366,783	894	3,172	1,700
IV. East Midland	2,790,492	523,822	1,233	4,351	2,713
V. West Midland	2,693,176	242,507	483	1,845	1,109
VI. South-Western........	1,462,397	1,008,253	2,569	10,170	7,095
VII. South-Eastern	1,192,524	408,962	1,035	3,697	2,459
VIII. Southern	2,069,696	214,216	424	1,589	922

REMARKS ON THE WEATHER

DURING THE QUARTER ENDED 31ST DECEMBER, 1865.

By C. PIAZZI SMYTH, ESQ., *Astronomer Royal for Scotland.*

The month of October has been generally characterized by a very low barometrical pressure, with large disturbances, a rather low mean temperature (succeeding, be it remembered, a month of extraordinary warmth), air rather dry, but visited by unusually heavy showers, and much wind, whose direction was more from the east and north than ever known before. The highest mean temperatures were in the south, as thus: South Cairn = 49°·6, Leith = 48°·8, Girvan = 48°·7, and Callton-Mor = 48°·4; while the lowest mean temperatures were northward, combined with height, as Braemar = 41°·7, Castle Newe = 42°·1, and North Esk Reservoir = 43°·1. The distribution of rain was unusual, being in amount, or in depth fallen, greatly in excess at southern and eastern stations, though northern and western had the greatest number of days on which rain fell. Thus, Aberdeen had 22 days, New Pitsligo 21, Castle Newe 21, Portree 21, and House of Tongue 21 days on which rain fell; while at Drumlanrig there were only 7, at Leith 8, at Dundee 8, and at Kettins 8; but the greatest amount of rain over the whole country fell at Mowhaugh = 13·70 inches, at Yester 9·15, at Thurston 7·80, at Thirlestane Castle 7·70, at Milne Graden 7·70, and at North Esk Reservoir 7·60 inches. The least amount of rain was at Bressay = 2·20 inches, and at Culloden = 2·28 inches.

In November the weather was very nearly the average of that month,—the barometer near the usual height, and the other instrumental returns not far from their ordinary numbers; or if any features should be noted, they are that the mean temperature was slightly above the average, and the wind more from west and south than generally obtains. Yet the month was, as a matter of course, depending with the progress of the season, several degrees colder than its predecessor October; and this cold was felt conspicuously more in the mainland and the south than in the northern islands. Thus, the highest mean temperatures registered were, at Bressay 45°·7, at Scourie 45°·0, and at South Cairn 44°·9; while the lowest were, at Wanlockhead 37°·6, at Thirlestane Castle 38°·1, and at North Esk Reservoir 38°·2. The rain was in every way large on the west and small all along the east coast. Thus, the number of rainy days was, at Sandwick 25, at the House of Tongue 24, and at Stornoway 24; but was at Mowhaugh only 6, at Dalkeith 7, at Thirlestane Castle 9, and at Drumlanrig 9; the depth of rain fallen being at Portree 7·23 inches, at South Cairn 6·20 inches, at Wanlockhead 5·93 inches, and at Calton-Mor 5·88 inches; the least amounts being at Elgin = 0·33 inch, and at Dalkeith = 0·90 inch.

But in December we come to a very remarkable month, for it upsets the average progress of the season, and is warmer in place of being colder than November. The barometer, too, was very high generally, though with much greater variations than ever before chronicled, and which increased in a marked degree with northern latitudes. The mean temperature was 3°·9 above the average; the humidity rather small; the rain ordinary; the wind eminently from the south-west, and of greater force than known in any previous December. It may be remarked, too, that lightning was almost as frequent, and auroras as rare, as in a summer, rather than a winter month. The highest temperatures were amongst the northern islands. Thus, the mean temperatures were, at Bressay = 47°·8, at Scourie 46°·0, and at Portree 44°·9; while the lowest were, at Wanlockhead 38°·3, at North Esk Reservoir 39°·2, and at Castle Newe 39°·9. The greatest number of rainy days was, at Portree 29, at Bressay 27, and at Greenock 25; while the least was, at Mowhaugh 3, at Thurston 7, and at Elgin 7. The greatest depths of rain fallen were, at the same time, at Portree = 11·36 inches, at Wanlockhead 10·42, and at Taymouth 7·75 inches; while the least were at Leith = 0·64 inch, and at East Linton 0·96 inch. The pressure of the wind was recorded very high at most stations, and at one of them as being nearly eleven pounds on the square foot, or equal to a powerful gale blowing day and night without intermission through the whole month.

No. III.—IRELAND.

The Quarterly Return had not been received at time of going to press. To complete the Summary of the United Kingdom, the Registrar-General for Ireland has kindly supplied the figures entered below opposite to that country.

IV.—GREAT BRITAIN AND IRELAND.

SUMMARY *of* MARRIAGES, *in the Quarter ended* 30*th September*, 1865; *and* BIRTHS *and* DEATHS, *in the Quarter ended* 31*st December*, 1865.

COUNTRIES.	AREA in Statute Acres.	POPULATION, 1861. (*Persons.*)	Marriages.	Births.	Deaths.
		No.	No.	No.	No.
England and Wales	37,324,883	20,066,224	45,863	179,020	121,304
Scotland	19,639,377	8,062,294	5,335	26,866	17,062
Ireland	20,322,641	5,798,967	5,797	33,581	21,163
GREAT BRITAIN AND IRELAND	77,286,901	28,927,485	56,995	239,467	159,529

rade of United Kingdom, 1865-64-63.—*Distribution of* Exports *from United Kingdom, according to the Declared Real Value of the Exports; and the Computed Real Value (Ex-duty) of* Imports *at Port of Entry, and therefore including Freight and Importer's Profit.*

Merchandise (*excluding Gold and Silver*), Imported from, and Exported to, the following Foreign Countries, &c. [000's omitted.]	First Nine Months.					
	1865.		1864.		1863.	
	Imports from	*Exports to*	Imports from	*Exports to*	Imports from	*Exports to*
I.—FOREIGN COUNTRIES:	£	£	£	£	£	£
orthern Europe; viz., Russia, Sweden, Norway, Denmark & Iceland, & Heligoland	15,025,	4,530,	14,199,	4,541,	11,790,	3,731,
ntral Europe; viz., Prussia, Germany, the Hanse Towns, Holland, and Belgium	23,110,	21,034,	22,497,	19,138,	18,357,	15,981,
estern Europe; viz., France, Portugal (with Azores, Madeira, &c.), and Spain (with Gibraltar and Canaries)	25,814,	11,120,	25,805,	11,107,	22,256,	11,975,
uthern Europe; viz., Italy, Austrian Empire, Greece, Ionian Islands, and Malta	3,015,	6,026,	2,627,	6,265,	3,002,	6,019,
evant; viz., Turkey, with Wallachia and Moldavia, Syria and Palestine, and Egypt	17,806,	8,960,	19,128,	10,596,	15,882,	7,632,
orthern Africa; viz., Tripoli, Tunis, Algeria and Morocco	288,	234,	280,	137,	385,	145,
estern Africa	795,	472,	701,	408,	927,	452,
astern Africa; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Mooria Islands	109,	88,	51,	69,	31,	66,
ndian Seas, Siam, Sumatra, Java, Philippines; other Islands	1,120,	1,403,	619,	1,272,	1,182,	861,
outh Sea Islands	20,	37,	4,	62,	20,	136,
hina, including **Hong Kong**	7,247,	4,727,	11,788,	4,088,	10,956,	2,921,
nited States of America	7,691,	12,333,	13,505,	14,843,	14,669,	10,492,
exico and Central America	3,203,	1,700,	2,724,	1,498,	1,445,	1,489,
oreign West Indies and Hayti	4,637,	2,616,	5,280,	3,058,	4,151,	2,559,
outh America (Northern), New Granada, Venezuela, and Ecuador	1,248,	2,116,	1,420,	1,782,	630,	1,342,
" **(Pacific)**, Peru, Bolivia, Chili, and Patagonia	5,236,	2,251,	4,011,	2,172,	4,524,	1,867,
" **(Atlantic)** Brazil, Uruguay, and Buenos Ayres	6,099,	6,148,	6,901,	6,782,	5,251,	4,103,
hale Fisheries; Grnlnd., Davis, Straits, Southn. Whale Fishery, & Falkland Islands	72,	9,	42,	13,	28,	11,
Total—Foreign Countries	122,535,	85,804,	131,582,	87,826,	115,486,	61,782,
II.—BRITISH POSSESSIONS:						
ritish India, Ceylon, and Singapore	25,591,	15,853,	37,612,	15,943,	30,021,	14,711,
ustral. Cols.—New South Wales and Victoria	5,937,	6,362,	5,563,	5,490,	3,834,	6,044,
" " So. Aus., W. Aus., Tasm., and N. Zealand	29,000,	2,804,	2,754,	2,719,	2,039,	2,545,
ritish North America	3,952,	4,092,	4,110,	5,275,	5,229,	4,262,
" W. Indies with Btsh. Guiana & Honduras	6,259,	2,034,	9,015,	3,038,	6,544,	2,689,
ape and Natal	1,502,	1,428,	1,185,	1,619,	1,250,	1,109,
rt. W. Co. of Af., Ascension and St. Helena	320,	296,	195,	200,	121,	227,
auritius	911,	465,	1,230,	490,	1,640,	340,
hannel Islands	285,	579,	612,	804,	482,	585,
Total—British Possessions	47,657,	33,913,	62,276,	35,578,	51,160,	32,512,
General Total £	170,192,	119,717,	193,858,	123,404,	166,646,	94,294,

Trade of United Kingdom, 1863-54.—*Computed Real Value of the Total Exports and British*

Merchandise Exported to the following Foreign Countries. [000's omitted.]	1863.	1862.	1861.	1860.	1859.
I.—FOREIGN COUNTRIES.	£	£	£	£	£
Northern Europe; viz., Russia, Sweden, Norway, Denmark, & Iceland, & Heligoland	3,487,	2,319,	3,617,	2,889,	2,896,
Central Europe; viz., Prussia, Germany, the Hanse Towns, Holland and Belgium ...	18,936,	14,515,	13,709,	11,189,	9,279,
Western Europe; viz., France, Portugal, (with Azores, Madeira, &c.), and Spain, (with Gibraltar and Canaries)	16,271,	14,015,	9,555,	8,065,	5,460,
Southern Europe; viz., Italy, Austrian Empire, Greece, Ionian Islands, and Malta	2,122,	1,784,	1,972,	1,415,	1,190,
Levant; viz., Turkey, with Wallachia and Moldavia, Syria and Palestine, and Egypt	451,	585,	278,	340,	490,
Northern Africa; viz., Tripoli, Tunis, Algeria, and Morocco	61,	58,	41,	43,	18,
Western Africa	190,	262,	236,	194,	210,
Eastern Africa; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Mooria Islands	—	—	—	—	—
Indian Seas, Siam, Sumatra, Java, Philippines, other Islands	19,	15,	12,	17,	21,
South Sea Islands	—	—	—	—	—
China, including **Hong Kong**	209,	100,	92,	134,	129,
United States of America	4,352,	4,846,	1,961,	1,241,	1,864,
Mexico and Central America	76,	65,	73,	90,	55,
Foreign West Indies and Hayti	132,	157,	114,	103,	108,
South America (Northern), New Granada, Venezuela and Ecuador	67,	48,	21,	49,	62,
" **(Pacific)**, Peru, Bolivia, Chili, and Patagonia	70,	37,	44,	82,	74,
" **(Atlantic)**, Brazil, Uruguay, and Buenos Ayres	150,	154,	179,	184,	205,
Other countries (unenumerated)	60,	26,	26,	28,	21,
Total—Foreign Countries	46,653,	38,986,	31,930,	26,063,	22,082,
II.—BRITISH POSSESSIONS:					
British India, Ceylon, and Singapore	909,	791,	692,	807,	1,004,
Austral. Cols.—New South Wales and Victoria, So. Aus., W. Aus., Tasm., and N. Zea.	1,146,	903,	838,	892,	1,266,
British North America	714,	790,	466,	259,	350,
" W. Indies with Btsh. Guiana & Honduras	433,	341,	219,	234,	269,
Cape and Natal	103,	114,	117,	97,	110,
Brt. W. Co. of Af., Ascension and St. Helena....	96,	72,	62,	46,	41,
Mauritius	38,	22,	38,	26,	15,
Ports in the Crimea	—	—	—	—	—
Channel Islands	145,	145,	155,	193,	130,
Other possessions	63,	12,	13,	13,	14,
Total—British Possessions	3,647,	3,190,	2,600,	2,567,	3,199,
General Total ....£	50,300,	42,176,	34,530,	28,630,	25,281,

of Foreign *and* Colonial *Produce and Manufactures to each Foreign Country Possession.*

1858.	1857.	1856.	1855.	1854.	Merchandise Exported to the following Foreign Countries. [000's omitted.]
£	£	£	£	£	I.—Foreign Countries.
2,679,	2,276,	2,571,	643,	606,	**Northern Europe**; viz., Russia, Sweden, Norway, Denmark, & Iceland, & Heligoland
9,125,	9,475,	9,385,	10,387,	8,840,	**Central Europe**; viz., Prussia, Germany, the Hanse Towns, Holland, and Belgium
5,011,	6,054,	4,971,	4,836,	3,639,	**Western Europe**; viz., France, Portugal (with Azores, Madeira, &c.), and Spain, (with Gibraltar and Canaries)
1,050,	933,	1,374,	982,	737,	**Southern Europe**; viz., Italy, Austrian Empire, Greece, Ionian Islands, and Malta
530,	241,	380,	568,	448,	**Levant**; viz., Turkey, with Wallachia and Moldavia, Syria and Palestine, and Egypt
36,	41,	31,	27,	17,	**Northern Africa**; viz., Tripoli, Tunis, Algeria, and Morocco
177,	251,	224,	220,	175,	**Western Africa**
—	—	—	—	—	**Eastern Africa**; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Mooria Islands
12,	14,	16,	6,	26,	**Indian Seas**, Siam, Sumatra, Java, Philippines, other Islands
—	—	—	—	—	South Sea Islands
90,	55,	71,	26,	26,	**China**, including **Hong Kong**
1,302,	1,091,	699,	745,	923,	**United States of America**
45,	55,	49,	40,	42,	Mexico and Central America
67,	98,	93,	64,	45,	Foreign West Indies and Hayti
45,	29,	36,	29,	20,	**South America (Northern)**, New Granada, Venezuela and Ecuador
57,	77,	91,	119,	66,	„ **(Pacific)**, Peru, Bolivia, Chili, and Patagonia
212,	294,	237,	163,	162,	„ **(Atlantic)**, Brazil, Uruguay, and Buenos Ayres
17,	25,	26,	31,	25,	Other countries (unenumerated)
20,455,	21,009,	20,254,	18,884,	15,797,	*Total—Foreign Countries*
					II.—British Possessions.
670,	583,	520,	444,	549,	British India, Ceylon, and Singapore
1,150,	1,543,	1,760,	943,	1,475,	Austral. Cols.—New South Wales and Victoria, So. Aus., W. Aus., Tasm., and N. Zea.
289,	339,	258,	204,	300,	British North America
233,	261,	229,	176,	206,	„ W. Indies with Bh. Guiana & Honduras
109,	88,	73,	45,	63,	Cape and Natal
55,	80,	77,	75,	75,	Brt. W. Co. of Af., Ascension and St. Helena
51,	19,	17,	15,	18,	Mauritius
—	—	12,	78,	3,	Ports in the Crimea
152,	170,	181,	133,	138,	Channel Islands
10,	16,	12,	7,	12,	Other possessions
2,719,	3,099,	3,139,	2,119,	2,839,	*Total—British Possessions*
23,174,	24,108,	23,393,	21,003,	18,636,	General Total

IMPORTS.—(United Kingdom.)—Whole Years, 1865-64-63-62-61.—*Computed Real Value (Ex-duty), at Port of Entry (and therefore including Freight and Importer's Profit), of Articles of Foreign and Colonial Merchandize Imported into the United Kingdom.*

(Whole Years.) [000's omitted.] FOREIGN ARTICLES IMPORTED.		1865.	1864.	1863.	1862.	1861.
		£	£	£	£	£
RAW MATLS.—*Textile.*	Cotton Wool	66,032,	78,204,	56,278,	31,093,	38,653,
	Wool (Sheep's)..	15,367,	15,998,	12,290,	12,109,	9,719,
	Silk	18,135,	12,940,	15,248,	15,897,	7,907,
	Flax	5,370,	5,323,	4,271,	5,206,	3,423,
	Hemp	3,531,	3,976,	3,451,	2,645,	1,894,
	Indigo	2,004,	2,248,	2,398,	2,446,	2,977,
		110,439,	118,689,	93,936,	69,396,	64,573,
" " *Various.*	Hides	3,044,	3,132,	3,217,	3,188,	2,892,
	Oils	4,311,	3,390,	4,075,	3,951,	3,576,
	Metals	5,185,	4,504,	4,087,	4,604,	3,752,
	Tallow	3,125,	2,077,	2,439,	2,508,	3,312,
	Timber	11,501,	10,946,	10,754,	9,293,	9,931,
		27,166,	24,049,	24,572,	23,544,	23,463,
" " *Agrcltl.*	Guano	2,676,	1,463,	2,659,	1,635,	2,022,
	Seeds	3,983,	3,947,	3,372,	3,211,	3,108,
		6,659,	5,410,	6,031,	4,846,	5,130,
TROPICAL, &c., PRODUCE.	Tea	10,044,	9,439,	10,666,	9,176,	6,851,
	Coffee	4,604,	3,616,	4,155,	3,303,	2,629,
	Sugar & Molasses	13,002,	16,458,	12,367,	12,019,	13,252,
	Tobacco	3,250,	3,361,	3,017,	2,351,	2,195,
	Rice	1,331,	1,809,	1,866,	2,400,	2,127,
	Fruits	1,371,	1,172,	1,562,	1,228,	1,470,
	Wines	3,914,	5,003,	4,497,	3,649,	3,863,
	Spirits	1,508,	1,990,	1,706,	1,692,	1,734,
		39,024,	42,848,	39,836,	35,818,	34,121,
FOOD	Grain and Meal.	20,643,	19,709,	25,886,	37,748,	34,750,
	Provisions	10,295,	9,740,	8,789,	8,564,	7,780,
		30,938,	29,449,	34,675,	46,312,	42,530,
Remainder of Enumerated Articles		5,525,	5,612,	4,776,	4,213,	3,869,
TOTAL ENUMERATED IMPORTS		219,751,	226,057,	203,826,	184,129,	173,687,
Add for UNENUMERATED IMPORTS (say)		54,937,	56,511,	45,154,	42,473,	43,422,
TOTAL IMPORTS		274,688,	282,568,	248,980,	226,592,	217,109,

Note.—Heretofore the March number of the *Journal* has only contained the value of imports made up for eleven months; it is now compiled for whole years, and will be continued for the same term hereafter.

EXPORTS.—(United Kingdom.)—Whole Years, 1865-64-63-62-61.—*Declared Real Value, at Port of Shipment, of Articles of* BRITISH *and* IRISH *Produce and Manufactures Exported from United Kingdom.*

(Whole Years.) [000's omitted.] BRITISH PRODUCE, &c., EXPORTED.		1865.	1864.	1863.	1862.	1861.
		£	£	£	£	£
MANFRS.—*Textile.*	Cotton Manufactures ..	46,904,	45,760,	39,424,	30,569,	37,544,
	„ Yarn	10,351,	9,096,	8,020,	6,203,	9,298,
	Woollen Manufactures	20,102,	18,566,	15,519,	13,147,	11,141,
	„ Yarn	5,424,	5,422,	5,065,	3,854,	3,546,
	Silk Manufactures........	1,884,	2,018,	1,959,	2,015,	2,036,
	„ Yarn	294,	297,	270,	346,	276,
	Linen Manufactures	9,155,	8,158,	6,510,	5,131,	3,859,
	„ Yarn	2,505,	3,010,	2,536,	1,852,	1,616,
		96,619,	92,327,	79,303,	63,117,	69,311,
„ *Sewed.*	Apparel	2,640,	2,584,	2,808,	2,556,	2,154,
	Haberdy. and Mllnry.	5,014,	4,787,	4,862,	3,592,	3,423,
		7,654,	7,371,	7,170,	6,148,	5,577,
METALS	Hardware	4,334,	4,159,	3,827,	3,346,	3,425,
	Machinery....................	5,214,	4,854,	4,365,	4,097,	4,220,
	Iron	13,451,	13,214,	13,111,	11,302,	10,342,
	Copper and Brass........	3,166,	3,911,	4,233,	2,823,	2,813,
	Lead and Tin	2,847,	2,786,	2,863,	2,729,	1,822,
	Coals and Culm	4,432,	4,162,	3,708,	3,750,	3,593,
		33,444,	33,086,	32,107,	28,047,	25,715,
Ceramic Manufcts.	Earthenware and Glass	2,186,	2,179,	2,090,	1,863,	1,660,
Indigenous Mnfrs.	Beer and Ale................	2,060,	1,823,	1,777,	1,594,	1,417,
	Butter	334,	328,	472,	379,	484,
	Cheese	111,	148,	156,	127,	131,
	Candles	109,	142,	190,	226,	279,
	Salt	276,	281,	287,	321,	370,
	Spirits	245,	503,	454,	511,	484,
	Soda	1,125,	917,	868,	886,	604,
		4,260,	4,142,	4,204,	4,044,	3,769,
Various Manufcts.	Books, Printed	517,	466,	457,	416,	445,
	Furniture	290,	259,	302,	276,	264,
	Leather Manufactures	2,462,	2,404,	2,318,	2,565,	2,197,
	Soap	184,	231,	256,	227,	230,
	Plate and Watches	404,	427,	463,	505,	449,
	Stationery	403,	354,	345,	286,	649,
		4,260,	4,141,	4,141,	4,275,	4,234,
Remainder of Enumerated Articles		9,703,	9,648,	8,669,	8,839,	4,556,
Unenumerated Articles..............................		7,736,	7,542,	8,805,	7,805,	10,293,
	TOTAL EXPORTS....................	165,862,	160,436,	146,489,	124,138,	125,115,

SHIPPING.—Foreign Trade.—(United Kingdom.)—Years, 1865-64-63-62.— ***Vessels Entered and Cleared with Cargoes, including repeated Voyages, but excluding Government Transports.***

(Whole Years.)	1865.			1864.		1863.		1862.	
Entered :—	Vessels.	Tonnage (000's omitted.)	Average Tonnage.	Vessels.	Tonnage (000's omitted.)	Vessels.	Tonnage. (000's omitted.)	Vessels.	Tonnage (000's omitted.)
Vessels belonging to—	No.	Tons.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Russia	522	178,	341	683	237,	423	137,	436	135,
Sweden	1,023	188,	184	1,233	201,	1,043	172,	963	162,
Norway	3,676	875,	238	3,987	869,	3,360	755,	3,121	657,
Denmark	2,125	226,	106	2,731	271,	2,871	278,	2,634	257,
Prussia and Ger. Sts.	3,959	924,	233	2,379	600,	3,881	942,	3,857	929,
Holland and Belgium	2,080	286,	138	1,849	262,	1,702	242,	1,778	247,
France	3,305	301,	91	2,523	203,	2,884	238,	2,336	197,
Spain and Portugal	419	127,	303	430	130,	364	112,	375	115,
Italy & other Eupn. Sts.	1,154	331,	296	885	254,	919	266,	928	267,
United States	343	363,	1,058	429	457,	681	692,	1,327	1,179,
All other States	23	7,	304	17	6,	12	4,	15	5,
	18,629	3,806,	204	17,146	3,490,	18,140	3,838,	17,770	4,150,
United Kingdm. & Depds.	25,881	8,358,	323	24,962	7,812,	23,773	7,299,	22,356	6,590,
Totals Entered	44,510	12,164,	273	42,108	11,302,	41,913	11,137,	40,126	10,740,
Cleared :—									
Russia	444	155,	349	600	220,	420	131,	417	127,
Sweden	927	156,	168	1,161	186,	1,039	167,	981	163,
Norway	1,995	379,	190	2,398	433,	1,860	333,	1,974	333,
Denmark	2,399	251,	105	2,924	289,	3,272	321,	3,153	309,
Prussia and Ger. Sts.	5,382	1,093,	203	3,422	730,	5,548	1,132,	5,480	1,072,
Holland and Belgium	2,258	352,	151	1,831	287,	1,888	292,	2,195	331,
France	4,128	431,	104	4,547	454,	4,602	450,	5,070	492,
Spain and Portugal	415	127,	306	436	136,	390	124,	380	121,
Italy & other Eupn. Sts.	1,321	421,	316	1,242	374,	1,106	330,	1,039	297,
United States	394	397,	1,008	434	459,	627	648,	1,172	1,052,
All other States	38	9,	237	31	11,	21	6,	32	12,
	19,701	3,771,	191	19,026	3,579,	20,773	3,934,	21,893	4,309,
United Kingdm. & Depds.	28,480	9,046,	307	28,229	8,590,	27,624	7,952,	27,066	7,400,
Totals Cleared	48,181	12,817,	266	47,255	12,169,	48,397	11,886,	48,959	11,709,

GOLD AND SILVER BULLION AND SPECIE.—IMPORTED AND EXPORTED.—(United Kingdom.)—*Computed Real Value for the* Whole Years, 1865-64-63.

[000's omitted.]

(Whole Years.)	1865.		1864.		1863.	
	Gold.	*Silver.*	Gold.	*Silver.*	Gold.	*Silver.*
Imported from:—	£	£	£	£	£	£
Australia	5,051,	—	2,657,	—	5,995,	—
So. Amca. and W. Indies	2,444,	4,929,	5,240,	7,002,	3,897,	6,651,
United States and Cal.	4,304,	230,	7,480,	155,	7,321,	627,
	11,799,	5,159,	15,377,	7,157,	17,413,	7,278,
France	308,	854,	574,	1,115,	187,	1,257,
Hanse Towns, Holl. & Belg.	130,	698,	220,	2,271,	316,	2,062,
Prtgl., Spain, and Gbrltr.	810,	108,	133,	93,	16,	90,
Mlta., Trky., and Egypt	320,	1,	81,	1,	115,	4,
China	—	—	—	—	—	—
West Coast of Africa	112,	20,	96,	24,	70,	8,
All other Countries....	1,006,	136,	420,	166,	1,025,	189,
Totals Imported....	14,485,	6,976,	16,901,	10,827,	19,142,	10,888,
Exported to:—						
France	4,263,	700,	7,775,	2,146,	3,503,	1,258,
Hanse Towns, Holl. & Belg.	323,	2,006,	82,	1,001,	1,104,	791,
Prtgl., Spain, and Gbrltr.	1,491,	4,	1,590,	29,	1,745,	5,
	6,077,	2,710,	9,447,	3,176,	6,352,	2,054,
Ind. and China (viâ Egypt)	580,	3,808,	2,060,	6,308,	3,474,	8,815,
Danish West Indies	—	—	—	—	—	—
United States	61,	5,	185,	5,	40,	14,
South Africa	19,	—	208,	—	159,	7,
Mauritius	—	—	—	—	—	—
Brazil	1,271,	105,	927,	143,	1,681,	50,
All other Countries....	485,	90,	453,	245,	3,597,	300,
Totals Exported....	8,493,	6,718,	13,280,	9,877,	15,303,	11,240,
Excess of *Imports*	5,992,	258,	3,621,	950,	3,839,	—
" Exports	—	—	—	—	—	648,

REVENUE.—(UNITED KINGDOM.)—31ST DEC., 1865-64-63-62.

Net Produce in YEARS *and* QUARTERS *ended* 31ST DEC., 1865-64-63-62.

[000's omitted.]

QUARTERS, ended 31st Dec.	1865.	1864.	1865.		Corresponding Quarters.	
			Less.	More.	1863.	1862.
	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
Customs	5,670,	5,932,	262,	—	5,970,	6,320,
Excise	5,110,	5,000,	—	110,	4,753,	4,000,
Stamps	2,373,	2,223,	—	150,	2,293,	2,187,
Taxes	1,317,	1,294,	—	23,	1,285,	1,270,
Post Office	1,130,	1,090,	129,	—	990,	950,
	15,600,	15,539,	391,	283,	15,291,	14,727,
Property Tax	1,451,	1,580,	—	40,	2,132,	2,931,
	17,051,	17,119,	391,	323,	17,423,	17,658,
Crown Lands	90,	88,	—	2,	87,	86,
Miscellaneous	866,	863,	—	4,	808,	634,
Totals	18,007,	18,070,	391,	329,	18,318,	18,378,
			NET DECR. £62,181			

YEARS, ended 31st Dec.	1865.	1864.	1865.		Corresponding Years.	
			Less.	More.	1863.	1862.
	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
Customs	21,707,	22,535,	,828,	—	23,421,	24,036,
Excise	19,649,	19,343,	—	,306,	17,745,	17,534,
Stamps	9,636,	9,468,	—	,168,	9,252,	8,914,
Taxes	3,364,	3,261,	—	,103,	3,208,	3,148,
Post Office	4,250,	4,060,	,396,	—	3,800,	3,600,
	58,606,	58,667,	1,224,	,577,	57,426,	57,232,
Property Tax	7,603,	7,999,	—	,190,	9,806,	11,104,
	66,209,	66,666,	1,224,	,767,	67,232,	68,336,
Crown Lands	314,	307,	—	6,	,302,	,298,
Miscellaneous	2,673,	3,152,	,478,	—	2,899,	2,362,
Totals	69,196,	70,125,	1,702,	,773,	70,433,	70,996,
			NET DECR. £928,896			

REVENUE.—UNITED KINGDOM.—QUARTER ENDED 31ST DEC., 1865:—
APPLICATION.

An Account showing the* REVENUE *and other* RECEIPTS *of the* QUARTER *ended* 31*st December,* 1865; *the* APPLICATION *of the same, and the Charge of the Consolidated Fund for the said Quarter, together with the Surplus or Deficiency upon such Charge.

Received:—

Surplus Balance beyond the Charge of the *Consolidated Fund* for the Quarter ended 30th September, 1865, viz.:—		£
Great Britain	—	
Ireland	£220,582	
		220,582
Income received in the Quarter ended 31st December, 1865, as shown in Account I		18,007,415
Amount received in the quarter ended 31st December, 1865, in repayment of Advances for Public Works, &c.		512,504
		£18,740,501
Balance, being the Deficiency on 31st December, 1865, upon the charge of the Consolidated Fund in Great Britain, to meet the Dividends and other charges payable in the Quarter to 31st March, 1866, and for which Exchequer Bills (Deficiency) will be issued in that Quarter		2,573,604
		£21,314,105

Paid:—

Amount applied out of the Income in Redemption of Deficiency Bills Issued in the Quarter to 31st December, 1865, for the charge of the Consolidated Fund in Great Britain on 30th September, 1865		£ 3,018,224
Amount applied out of the Income to *Supply Services* in the Quarter ended 31st December, 1865		8,608,219
Charge of the *Consolidated Fund* for the Quarter ended 31st December, 1865, viz.:—		
Interest of the Permanent Debt	£6,241,093	
Terminable Debt	304,288	
Principal of Exchequer Bills	384,200	
Interest of Exchequer Bills	57,568	
" Deficiency "	—	
The Civil List	101,395	
Other Charges on Consolidated Fund	533,955	
Advances for Public Works, &c.	524,297	
Sinking Fund	630,143	
		8,776,938
Surplus Balance in Ireland beyond the Charge of the Consolidated Fund in Ireland for the Quarter ended 31st December, 1865		910,724
		£21,314,105

BRITISH CORN.—*Gazette Average Prices* (ENGLAND AND WALES), *Fourth Quarter of* 1865.

[This Table is communicated by the Statistical and Corn Department, Board of Trade.]

Weeks ended on a Saturday, 1865.	Weekly Average. (Per Impl. Quarter.) Wheat.	Barley.	Oats.
	s. *d.*	*s.* *d.*	*s.* *d.*
Oct. 7	41 1	30 4	20 5
„ 14	41 11	30 9	20 11
„ 21	42 1	30 11	20 11
„ 28	42 4	31 –	21 –
Average for October	41 10	30 9	20 9
Nov. 4	43 4	31 6	21 6
„ 11	45 3	32 5	22 –
„ 18	46 11	33 7	22 9
„ 25	46 10	34 –	22 9
Average for November	45 7	32 10	22 3
Dec. 2	46 6	33 10	22 8
„ 9	46 5	33 2	23 1
„ 16	46 8	32 9	22 11
„ 23	46 8	32 10	23 1
„ 30	46 11	32 6	23 6
Average for December	46 8	33 –	22 10
Average for the quarter	44 10	32 3	22 –
Average for the year	41 10	29 9	21 10

RAILWAYS.—PRICES, *Oct.—Dec.;—and* TRAFFIC, *Jan.—Dec.*, 1865.

Total Capital Ex-pended Mlns.	Railway.	For the (£100). Price on 1st Dec.	3rd Nov.	6th Oct.	Miles Open. '65.	'64.	Total Traffic. first 52 Weeks. (000's omitted.) '65.	'64.	Traffic pr. Mile pr. Wk. 52 Weeks. '65.	'64.	Dividends per Cent. for Half Years. 30 June, '65.	31 Dec. '65.	30 Jun. '64.
£					No.	No.	£	£	£	£	*s.* *d.*	*s.* *d.*	*s.* *d.*
52,4	Lond. & N. Westn.	126½	124¾	123⅛	1,274	1,274	5,850,	5,569,	87	84	60 –	70 –	57 6
45,6	Great Western ...	63½	63⅝	64	1,280	1,270	3,640,	3,551,	55	55	20 –	32 6	30 –
17,9	„ Northern...	129	130	131½	404	365	1,904,	1,776,	81	86	55 –	87 6	55 –
22,9	„ Eastern	46½	46¼	47½	721	663	1,720,	1,652,	47	49	10 –	25 –	12 6
13,8	Brighton	105	105	105¾	293	267	1,132,	1,043,	73	72	50 –	60 –	50 –
18,0	South-Eastern ...	80	79¾	79⅝	315	306	1,253,	1,198,	85	82	25 –	57 6	42 6
15,8	„ Western....	97½	97	96	490	470	1,173,	1,222,	50	51	45 –	55 –	45 –
186,4		92⅝	92⅜	92½	4,777	4,615	16,672,	16,011,	68	68	38 –	55 4	47 9
24,7	Midland	125¾	126	124¾	677	663	2,517,	2,423,	76	72	65 –	77 6	70 –
20,7	Lancsh. and York.	123½	122½	119¾	403	403	2,117,	2,003,	107	95	55 –	60 –	57 6
13,6	Sheffield and Man.	61½	58	57¾	246	246	997,	935,	81	77	10 –	25 –	27 6
32,2	North-Eastern	111½	110½	109½	1,208	1,160	3,378,	3,211,	60	55	55 –	62 6	55 –
91,2		105½	104¼	102¼	2,534	2,472	9,009,	8,572,	81	75	38 9	56 1	52 6
13,4	Caledonian	127	128	129	408	408	1,224,	1,154,	73	66	67 6	72 6	65 –
8,7	Gt. S. & Wn. Irlnd.	95	92¼	92	387	387	470,	435,	24	19	45 –	45 –	45 0
299,7	*Gen. aver.*	100⅞	98¾	98½	8,106	7,882	27,375,	26,172,	69	66	40 11	56 1	47 1

Consols.—Money Prices, 1*st Dec.*, 89¼ to ⅜ (de.)—1*st Nov.*, 88⅝ to 89 (de.).—1*st Oct.*, 88⅞ to 89¼ (de.). Exchequer Bills.—1*st Dec.*, 9*s.* to 5*s.* dis.—1*st Nov.*, 4*s.* to 3*s.* dis.—1*st Oct.*, 6*s.* to 1*s.* dis.

BANK OF ENGLAND.—WEEKLY RETURN.

***Pursuant to the Act 7th and 8th Victoria, c.* 32 (1844), *for Wednesday in each Week, during the* FOURTH QUARTER (*Oct.—Dec.*) *of* 1865.**

[0,000's omitted.]

1	2	3	4	5	6	7
ISSUE DEPARTMENT.					COLLATERAL COLUMNS.	
Liabilities.	DATES.	Assets.			Notes in Hands of Public. (Col. 1 minus col. 16.)	Minimum Rates of Discount at Bank of England.
Notes Issued.	(Wednesdays.)	Government Debt.	Other Securities.	Gold Coin and Bullion.		
£ Mlns.	1865.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	1865. Per ann.
27,09	Oct. 6	11,01	3,63	12,44	22,73	29 Sep. 4 p. ct.
26,61	„ 13	11,01	3,63	11,96	22,32	2 Oct. 5 „
26,65	„ 20	11,01	3,63	12,00	22,31	6 „ 6 „
27,06	„ 25	11,01	3,63	12,41	21,82	7 „ 7 „
27,16	Nov. 1	11,01	3,63	12,51	21,85	
27,22	„ 8	11,01	3,63	12,57	21,48	
27,51	„ 15	11,01	3,63	12,82	21,15	
28,32	„ 22	11,01	3,63	13,67	20,57	24 Nov. 6 „
28,50	„ 29	11,01	3,63	13,85	20,72	
28,33	Dec. 6	11,01	3,63	13,68	20,75	
27,89	„ 13	11,01	3,63	13,24	20,56	
27,96	„ 20	11,01	3,63	13,04	20,63	
27,34	„ 27	11,01	3,63	12,70	20,46	30 Dec. 7 „

BANKING DEPARTMENT.

8	9	10	11	12	13	14	15	16	17	18
Liabilities.					DATES.	Assets.				Totals of Liabilities and Assets.
Capital and Rest.		Deposits.		Seven Day and other Bills.	(Wdnsdys.)	Securities.		Reserve.		
Capital.	Rest.	Public.	Private.			Government.	Other.	Notes.	Gold and Silver Coin.	
£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	1865.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
14,55	3,82	6,89	13,80	,59	Oct. 6	10,38	4,17	4,36	,74	39,66
14,55	3,13	7,23	13,51	,55	„ 13	9,81	24,09	4,29	,78	38,97
14,55	3,17	3,59	14,01	,56	„ 20	9,33	21,45	4,34	,78	35,89
14,55	3,18	3,79	13,28	,55	„ 25	9,31	20,00	5,24	,81	35,37
14,55	3,18	4,16	12,98	,54	Nov. 1	9,24	20,14	5,31	,71	35,42
14,55	3,19	4,89	13,15	,52	„ 8	9,75	20,07	5,74	,74	36,30
14,55	3,20	5,69	12,27	,51	„ 15	9,74	19,31	6,36	,82	36,22
14,55	3,21	6,15	12,88	,49	„ 22	9,74	19,00	7,74	,79	37,28
14,55	3,18	6,54	12,47	,49	„ 29	9,74	18,95	7,78	,78	37,25
14,55	3,19	6,62	12,65	,47	Dec. 6	9,84	19,28	7,58	,78	37,48
14,55	3,22	7,08	14,26	,56	„ 13	9,84	21,61	7,33	,78	39,57
14,55	3,24	7,37	14,09	,42	„ 20	9,89	21,63	7,33	,83	39,68
14,34	3,25	8,54	13,23	,40	„ 27	9,89	22,51	6,88	,71	39,98

CIRCULATION.—COUNTRY BANKS.

Average Amount of Promissory Notes in Circulation in ENGLAND *and* WALES *on Saturday, in each Week during the* FOURTH QUARTER *(Oct.—Dec.) of* 1865; *and in* SCOTLAND *and* IRELAND, *at the Three Dates, as under.*

ENGLAND AND WALES.				SCOTLAND.				IRELAND.		
DATES.	Private Banks. (Fixed Issues, 4,14).	Joint Stock Banks. (Fixed Issues, 3,23).	TOTAL. (Fixed Issues, 7,37).	Three Weeks, ended	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 2,75).	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 6,35).
1865.	£ Mlns.	£ Mlns.	£ Mlns.	1865.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
Oct. 7	3,19	2,94	6,13							
„ 14	3,23	2,93	6,16	Oct. 14	1,63	2,88	4,51	3,28	3,32	6,61
„ 21	3,20	2,92	6,12							
„ 28	3,13	2,89	6,02							
Nov. 4	3,13	2,88	6,01							
„ 11	3,07	2,87	5,94	Nov. 11	1,93	2,95	4,88	3,40	3,49	6,89
„ 18	3,03	2,84	5,87							
„ 25	2,99	2,81	5,80							
Dec. 2	2,97	2,78	5,74							
„ 9	2,92	2,74	5,66	Dec. 9	1,75	3,15	4,90	3,20	3,49	6,69
„ 16	3,07	2,71	5,78							
„ 23	2,89	2,73	5,62							
„ 30	2,90	2,72	5,61							

FOREIGN EXCHANGES.—*Quotations as under,* LONDON *on Paris, Hamburg & Calcutta; —and New York, Calcutta, Hong Kong & Sydney, on* LONDON—*with collateral cols.*

1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Paris.				Hamburg.				Calcutta.				
DATES.	London on Paris. 3 m.d.	Bullion as arbitrated. Agnst. Engd.	Bullion as arbitrated. For Engd.	Prem. or Dis. on Gold per mille.	London on Hambg. 3 m.d.	Bullion as arbitrated. Agnst Engd.	Bullion as arbitrated. For Engd.	New York. 60 d.s.	India Council 60 d.s.	At Calcutta on London. 6 m.d.	Hong Kong. 6 m.s.	Sydney. 30 d.s.	Standard *Silver* in bars in London. pr. oz.
1865.		pr. ct.	pr. ct.			pr. ct.	pr. ct.	pr. ct.	*d.*	*d.*	*d.*	pr. ct.	*d.*
Oct. 7 ..	25·60	—	—	—	13·10½	—	—	157½	23¾	24½	54	1½ pm.	61 3/16
„ 21 ..	·65	—	·2	3 pm.	„ ¾	—	·1	„	„	„ ¼	„	„	„
Nov. 4 ..	·60	·1	—	„	„ ½	—	·1	159	24⅛	„ ⅞	53¾	„	„ ¼
„ 18 ..	·52½	·2	—	„	·10	·2	—	„ ½	24	25¼	„	„	„ ¾
Dec. 2 ..	·45	·2	—	1 pm.	·9	—	—	„	„	„	„	„	„ ½
„ 16 ..	„	·3	—	„	„ ¾	—	—	160½	„ ¼	„ ⅛	54¼	„	„ 9/16

Vol. XXIX.] [Part II.

JOURNAL OF THE STATISTICAL SOCIETY,

JUNE, 1866.

REPORT *of the* COUNCIL *for the* FINANCIAL YEAR *ended* 31*st December*, 1865, *and for the* SESSIONAL YEAR *ended* 15*th March*, 1866, *presented at the* THIRTY-SECOND ANNIVERSARY MEETING *of the* STATISTICAL SOCIETY, *held at the Society's Rooms*, 12, *St. James' Square, on Thursday*, 15*th March*, 1866; *with the* PROCEEDINGS *of that Meeting.*

LORD HOUGHTON, *President, in the Chair.*

IT has again become the duty of the Council of the Statistical Society to place before the Fellows an account of the proceedings of the Society. The transactions which they have now the satisfaction of reporting, constitute the work of the *thirty-second* year of the existence of the Society.

The tabular statement subjoined, exhibits the number of Fellows for the past and the previous sessional year, as well as the changes which have occurred during both periods.

	1865-66.	1864-65.
The number of Fellows on the 1st of March was	364	358
Life Members included in that number	68	64
Members lost during the year by death, withdrawal or default	29	35
New Members elected	30	40

The Cash Balance, the Income, and the Surplus of Assets for the financial years ending December, 1864 and 1865, were as follows:—

	Past Year.	Previous Year.
	£	£
Balance at the beginning of the year	175	330
Receipts from all sources during the year	921	748
Cash balance at the end of the year	302	175
Surplus of assets over liabilities at the end of the year	1,874	1,787

From March, 1864, to February, 1865, inclusive, ten papers were read at the ordinary meetings of the Society; and the large attendances of Fellows and visitors shows that the interest of those meetings was generally well sustained. The titles and authorship are given of the papers in the following list:—

March 21, 1865.—*Professor J. E. T. Rogers, M.A.*—On the Statistical and Fiscal Definition of the word "Income."

„ „ *Mr. Horace Mann.*—On Public Schools and the Civil Service of India.

April 18, „ *Mr. Hyde Clarke.*—On the supposed Decrease of the Turks and Increase of the Christians in Turkey.

May 16, „ *Professor W. S. Jevons, M. A.*—On the Variation of Prices and the Value of the Currency since 1782.

June 20, „ *Professor L. Levi.*—On the Economic Condition of the Highlands and Islands of Scotland.

„ „ *Sir J. Lubbock, Bart.*—On the Country Clearing.

Nov. 21, „ *Dr. W. A. Guy.*—On the Original and Acquired meaning of the Term Statistics, and on the Proper Functions of a Statistical Society: Also on the Question whether there be a Science of Statistics; and if so what are its Nature and Objects.

Dec. 19, „ *Dr. Wm. Farr.*—On the Mortality of Children in the different States of Europe. (*In continuation of the paper read last session.*)

Jan. 16, 1866.—*Mr. T. A. Welton.*—On French Population Statistics.

Feb. 20, „ *Colonel W. H. Sykes, M.P.*—On the Organisation, Strength, and Cost of the French and English Navies in 1865.

It is satisfactory to know that the sale of the Society's *Journal* to the public has steadily increased during the last five or six years. This fact is the more gratifying because it indicates a growing appreciation for a branch of scientific research usually thought devoid of popular attraction.

The books and reports on the shelves of the library amounting to more than 3,000 volumes have been duly catalogued to the present time, upon a system which affords a ready clue both to the author and to the subject. A few works on Economic Science, either by purchase or donation, have been added to those stated in detail in last year's report as forming part of the "Tooke Memorial."

The *thirty-fifth* meeting of the British Association was held at Birmingham in September. A list of the papers read before the Section of "Economic Science and Statistics" will be found in the *Journal* for December. The Section was presided over by Lord Stanley, whose opening address has been printed in the *Journal*. Of the papers read upon the same occasion, the Council have selected several for publication *in extenso;* three were printed in the last number of the *Journal*, and the two others will form part of the next.

In the Society's obituary for the last year, the names of three Fellows occur, whose services at an early period of our progress, the Council feel they cannot allow to pass unnoticed. Mr. Woronzow Greig was one of the first Honorary Secretaries of the Society, and continued to act in that capacity for some years. He rendered valuable assistance when assistance was most needed; and, though it is now some time since he took an active part in our proceedings, he continued to be a fellow up to the period of his decease.

Lord Monteagle bore a part, with many distinguished persons, in the formation of the Society, and always interested himself in its proceedings. In 1845, he was chosen President, and filled the chair during that and the following session.

The Society have sustained a more recent loss in the person of Dr. Whewell, the Master of Trinity College, Cambridge, a Member of the Council for the year just concluded, and one of the founders of the Society, and a man of eminence in many departments of science.

The figures given at the beginning of this report show that th losses sustained by the Society have been more than made good by fresh candidates for admission; and that the receipts of the year have been amply sufficient to meet all ordinary demands.

Since the auditors made their report upon the accounts of the past year, the Council have purchased in the names of the Trustees, 100*l.* new 3 per cent. By this transaction the funded property of the Society has been raised to 1,100*l.*

The Council congratulate the Society on the Report which they are enabled to present.

The President moved the adoption of the Report, together with the Abstract of Receipts and Payments, and the Auditors' Report.

The Resolution having been seconded, was carried unanimously.

A Ballot was then taken for the election of a President, Council, and Officers, for the ensuing twelvemonths, and the following was declared to be the list, viz.:—

COUNCIL AND OFFICERS FOR 1866-67.

President.

THE RIGHT HONOURABLE LORD HOUGHTON.

Council.

Major-General Balfour, C.B.
Right Hon. Lord Belper
A. J. Beresford Beresford-Hope, M.P.
Sir John P. Boileau, Bart., F.R.S.
William John Bovill
Samuel Brown
William Camps, M.D.
Edwin Chadwick, C.B.
David Chadwick
Leonard Henry Courtney
William Ewart, M.P.
William Farr, M.D., D.C.L., F.R.S.
Right Hon. Earl Fortescue
William Augustus Guy, M.B.
James Thomas Hammick
Frederick Hendriks
James Heywood, M.A., F.R.S.
William Barwick Hodge
Charles Jellicoe
Professor W. S. Jevons, M.A.
Francis Jourdan
Professor Leone Levi, F.S.A.
William Golden Lumley, LL.M.
Matthew Henry Marsh, M.P.
George Moffat, M.P.
William Newmarch, F.R.S.
Frederick Purdy
Professor J. E. Thorold Rogers, M.A.
Colonel W. H. Sykes, M.P., F.R.S.
John Walter

The names of the New Members of the Council are printed in Italics.

Treasurer.

William Farr, M.D., D.C.L., F.R.S.

Honorary Secretaries.

William Augustus Guy, M.B. | William Golden Lumley, LL.M.
Frederick Purdy.

Mr. Tayler moved a vote of thanks to the President, Council, and Officers, for their services during the past year, which was carried unanimously.

A vote of thanks to the Chair brought the proceedings to a close.

The Auditors made the following Report:—

"STATISTICAL SOCIETY,
"12, ST. JAMES' SQUARE,
"*London*, 31*st January*, 1866.

"The Auditors appointed to examine the Accounts for the year 1865

"REPORT:—

"That they have carefully compared the Entries in the Books, with the *Vouchers* for the same, from the 1st January to the 31st December, 1865, and find them correct. The *Receipts* (including a Balance from 1864, of 175*l.* 8*s.* 10*d.*) have been 1,096*l.* 6*s.* 7*d.*, and the *Payments* 794*l.* 12*s.* –*d.*, leaving a Balance in favour of the Society of 301*l.* 14*s.* 7*d.*

"They have also examined the statement of *Assets* and *Liabilities* prepared by the Council; the *former* amount to 1,978*l.* 19*s.* 2*d.*, and the *latter* to 104*l.* 14*s.* –*d.*,—leaving a Balance in favour of the Society of 1,874*l.* 5*s.* 2*d.*

"They also find that at the end of the year 1864, the number of Fellows was 365, of whom 11 Died, 7 Resigned, and 6 are Defaulters; and that 26 new Fellows were elected during the year, leaving 367 as the number on the list, 31st December, 1865.

(Signed) "GEORGE HURST,
"EDW. T. BLAKELY, } *Auditors.*"
"LEONE LEVI,

The statement of Receipts and Payments, and Assets and Liabilities, is as follows:—

(I.)—Receipts *and* Payments *of the* Statistical Society *for the* Year 1865.

RECEIPTS.				£	s.	d.
Balance in Bank, 31st December, 1865......	£167	8	–			
Balance in hands of Assistant Secretary	2	18	4			
Balance of Advertisement Cash in hands of Assistant Secretary	5	2	6			
				175	3	10
1865.						
Dividends on Consols................				29	7	6
Subscriptions, viz.:—						
Arrears—6 at £2 2*s*...	£12	12	–			
271 for 1865 „ 2 2*s*...	569	2	–			
1 for 1866-7-8-9 2 2*s*...	8	8	–			
				590	2	–
4 Compositions at £21				84	–	–
Journal Sales in account of 1864, per publisher				69	18	8
Journal Sales in account of 1865, per publisher and Assistant Secretary	£115	–	7			
Advertisements in the *Journal*	32	14	–			
				147	14	7
				£1,096	16	7

PAYMENTS.				£	s.	d.
Rent..........................				75	–	–
Salaries				185	–	–
Printing *Journal*	£346	16	–			
Making Index to *Journal*	4	4	–			
				351	–	–
Advertising *Journal* and Meeting...				31	6	6
Ordinary Meetings, viz.:—						
Refreshments..........	£7	9	5			
Attendants...........	6	8	–			
Diagrams............	10	19	6			
Other Expenses	9	12	–			
				34	8	11
Library (books and bookbinding) ...				13	12	1
Stationery and Miscellaneous Printing				34	8	5
Postage (Letters, *Journals*, &c.)				20	15	–
Fire and Light				10	10	5
Furniture and Repairs............				15	7	9
Other Incidental Expenses				23	2	11
Balance in Bank, 31st December, 1865				296	18	4
Balance of Petty Cash in hands of Assistant Secretary	£–	–	3			
Balance of Advertisement Cash in hands of Assistant Secretary..	4	16	–			
				4	16	3
				£1,096	16	7

(II.)—Balance Sheet *of* Assets *and* Liabilities *on* 31*st* December, 1865.

LIABILITIES.	£	s.	d.	£	s.	d.
Printing *Journal* for Dec., (say)	90	–	–			
Preparing Index	4	4	–			
				94	4	–
Books	4	17	6			
Stationery and Miscellaneous Printing	5	12	6			
				10	10	–
Balance in favour of Society				1,874	5	2
				£1,978	19	2

ASSETS.				£	s.	d.
Cash Balance	£296	18	4			
Petty Cash Balance ...	–	–	3			
Advertisement Cash Balance	4	16	–			
				301	14	7
Investments:—						
3 per Cent. Consols (328*l*. 15*s*. 4*d*.)..	£300	–	–			
New 3 per Cents. (671*l*. 14*s*. 8*d*.)..	657	4	7			
				957	4	7
Property (Estimated Value):—						
Books in Library..........	£400					
Journals in Stock	200					
Furniture	100					
				700	–	–
Arrears recoverable (say)..........				20	–	–
				£1,978	19	2

On the STATISTICAL PROGRESS *of the* KINGDOM *of* ITALY.

By SAMUEL BROWN, V.P.S.S.

[Read before the Statistical Society, 20th March, 1866.]

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I.—*General Description of the Kingdom of Italy.*

ITALY, if taken in its fullest extent, as claimed by recent Italian writers, may be considered to comprise the whole of the Peninsula, which lies between the Mediterranean and the Adriatic, bounded on the north by the immense semicircle of the Alps, as well as the different islands which surround it and naturally belong to it by locality and population.

The length of the Peninsula from Mont Blanc to Cape Spartivento is 1,240 kilometres = 771 English miles.

The Kingdom of Italy now includes the greater part of this territory. In the statistical tables the similar facts relating to the Venetian and Roman provinces as well as to the other parts of Italy under foreign dominion, are generally given for comparison.

The geographical position of Italy affords it singular advantages, lying between 47° and 36°; its northern provinces yield the same class of products as the central parts of France, whilst in the south, and especially in the islands of Sicily and Sardinia, tropical productions abound.

No very great rivers traverse Italy. The Po in the north and the Volturno in the south are the most considerable in their fertilizing effects on the country they pass through. But the numerous streams which descend from the mountains might easily be, and in many districts are, most profitably employed in the irrigation of the soil.

The long extent of sea coast, however (amounting to 5,400 kilometres = 3,356 miles), and the numerous harbours to be found in it have led to an amount of coasting trade which supplies the want of internal navigation. Some of the largest cities and towns are situated on the sea coast.

The Italians expect much from the position of their country, lying as it does on the way from Great Britain to her eastern possessions, and are sanguine in their belief that a great trade with the East will spring up in a brief period by the opening of the canal through the Isthmus of Suez.

They are consequently making the most earnest efforts to perfect the railway communication to Brindisi on the Adriatic shore, and the magnificent and arduous work of piercing the tunnel through Mount Cenis, is undertaken by the Italian Government with the view of making the line complete by way of Paris to the port on the Adriatic which is most convenient for Egypt. Other routes are designed by way of the St. Gothard to connect the railway system with Switzerland and the Rhine, and by the Splugen and Septimer Passes with the Danube. A most important report has just been issued by a commission, under the presidency of S. Corrente, appointed to consider the relative advantages of the several Alpine routes.

The mineral riches of Italy have hitherto been but little developed. In a short time, however, projected roads or railways will penetrate into various parts of the Appennines, and facilitate the extraction and transport of their long buried treasures.

In selecting some of the more striking national features from official or private statistics, I feel the great difficulty of the task. I can only give the most brief summary under each prominent head, and must even then leave a multitude of interesting questions without the least notice, referring the members to the large mass of statistical documents with which our library has been enriched by the Italian Government, through the kindness of Dottore Pietro Maestri. The other works to which I have had recourse have been the "Annuario Statistico Italiano" (prepared by that gentleman and S. Corrente, the other Italian Delegate to the Berlin Congress); the "Annuario di Economia Sociale e di Statistica del Regno d'Italia," by P. Duprat and A. Gicca, and one or two other works.

The Kingdom of Italy is constituted thus:—

1. The Old States of Sardinia, to which King Victor Emanuel II succeeded on the abdication of his father, 23rd March, 1849.

2. By the treaty of Villa Franca, 11th July, 1859, and the peace of Zurich, 10th November, 1859, he obtained Lombardy, part of the Papal States, and the Duchies of Parma and Modena.

3. The Grand Duchy of Tuscany was annexed by decree of 22nd March, 1860.

4. The Marches, Umbria, and the Two Sicilies were added to the Kingdom 17th December, 1860, the last great accession being in great measure the fruits of the genius and daring enterprise of the great patriot, Garibaldi.

The King was proclaimed King of Italy by vote of the Italian Parliament, 17th March, 1861.

II.—*Weights and Measures.*

The *metric system* of weights and measures is the only legal one throughout the kingdom, and was so established by the law of 29th June, 1861.

In the Sardinian States it had been in force since 1850. In Lombardy the law of 15th September, 1859, declared that it should be legal from 1st January, 1861. In Modena it was decreed in 1849, but not brought into general use. In Romagna, 8th October, 1859. In Emilia, 15th September, 1860. In Tuscany, 11th January, 1860, by decree of the Provisional Government. In the Marches and Umbria, 10th and 24th November, 1860.

Consequently all the weights and measures given in the statistical tables are in metrical quantities and values, the Italian lira being the same as the French franc, say 25 = 1*l.*

In order to facilitate the understanding of these values, I give the following equivalents most in use:—

English and French.			*French and English.*		
Length—					
1 mile	=	1·609 kilometres	1 kilometre	=	·6214 mile
1 yard	=	·914 metre	1 metre	=	1·904 yard
Surface—					
1 square mile	=	2·59 square kilometres	1 square kilometre	=	·3863 square mile
1 „ yard	=	·836 metre	1 square metre	=	1·196 „ yards
1 acre	=	·4047 hectare	1 hectare	=	2·471 acres
Capacity—					
1 pint	=	·5679 litre	1 litre	=	1·761 pint
1 bushel	=	·3635 hectolitre	1 hectolitre	=	2·751 bushels
1 qr. (8 bushels)	=	2·9078 „	1 „	=	22·01 imperial gals.
Weight—					
1 lb. avoirdupois (7,000 grains)	=	·4536 kilogram	1 kilogram	=	2·2046 lbs. avoirdupois
1 ton	=	1016·04 kilograms	1,000 kilograms	=	·9843 ton avoirdupois

III.—*Statistical Department of the Kingdom of Italy.*

The Statistical Department was organised in connection with the Ministry of Agriculture, Industry, and Commerce, by Royal Decrees of 9th October, 1861, and 3rd July, 1862.

It applies to the whole kingdom. In every Secretariat of the Provincial Governments, General Intendences, or Prefectures, a permanent statistical bureau is appointed, with a chief secretary and other employés according to the population of the different provinces, and a certain number of supernumeraries to be engaged for temporary work.

In each commune is a statistical committee, elected by the communal council, or, in default of election, nominated by the provincial council, and varying in number from nine members in cities of 60,000 inhabitants or more, to three in communes of less than 6,000 inhabitants.

The duties of the General Statistical Department are to prepare and see carried out, regulations and instructions for all the statistics required and which are not specially provided for in the duties of the other Ministries; to collect, examine, correct, and compile the statistical reports for the whole kingdom, and see to the clearness and accuracy of the publication of them; to compare the reports of the other Ministries with the direct results so obtained, and thus ensure the uniformity and correctness of the official statistics before they are delivered to the Chambers.

A statistical council consisting of a president and eight members was appointed to aid in the efficient working of the above regulations, and in like manner the provincial committees aid the local authorities. At the present time the Director of Italian Statistics is Dr. Pietro Maestri, who so ably represented the Italian Government at the last Statistical Congress at Berlin, whom we have the honour to include amongst our honorary foreign members, and whose valuable publications and patriotic labours demonstrate his peculiar fitness for his important office.

To this department has been confided the task of making arrangements for the Meeting of the International Statistical Congress to be held at Florence in the autumn of this year, and his Majesty, King Victor Emanuel II, has by Royal Decrees of 25th January last, appointed a Superior Commission under the Ministry of Agriculture, Industry, and Commerce, to prepare the programme and make the other necessary arrangements, and further in order to mark the interest which he takes in studies of so much importance to the union and prosperity of nations has nominated his eldest son Prince Humbert of Savoy, Prince of Piedmont, to be the President of the Congress.

IV.—*Territory.*

The territorial extension and the proportion of productive and unproductive surface is not yet very clearly defined. The Report of the Royal Commission in June, 1862, appointed to equalize the bases of the land taxes, and which includes the labours of the Sub-Commission for determining the survey divisions for the purposes of the census, shows that the Commission had availed itself of all the sources of information likely to furnish correct data. Statistical and military archives, the writings of private individuals, and official documents, maps, &c., had all been laid under contribution for the different provinces. But these do not constitute a uniform survey. In giving the following results, therefore, without the marginal reference to the authorities who furnished them, they can only be taken as approximations until a more trustworthy and complete report is made on actual mensuration. (Appendix, Tablo I.—Territory of Italy.)

Mr. L. S. Sackville West, Her Majesty's Secretary of Legation, at Florence, in his very interesting report on the statistics of Italy, states the superficies of the fifty-nine departments as 25,561,729 hectares, of which 3,969,279 are composed of mountains, rivers, roads, and cities; the remaining 21,592,450 hectares are divided amongst 4,153,645 proprietors, less than 6 hectares to each. In Piedmont, Sicily, and Naples, property in land is the most broken up, less so in Lombardy, Emilia, and Umbria, and it is very much concentrated in Tuscany and the Romagna.

The net income from the above is estimated at 1,008,000,000 frs., or 51·3 per hectare (= about 18*s.* 6*d.* per English acre).

Landed property pays taxes and imposts to the amount of 170,717,000 frs., giving an average tax of 7·90 frs. per hectare (about 2*s.* 6*d.* per acre).

If the provincial and communal charges are not taken into account, it will be found that the taxation on the income from land is as follows: in Piedmont one-tenth, Lombardy over one-seventh, Modena one-ninth, Parma one-seventh, Tuscany one-eleventh, Romagna one-tenth, Marches one-eleventh, Umbria one-tenth, Naples over one-ninth, and Sicily one-eleventh.

The landed property in Italy is burdened with charges and mortgages to the enormous amount of 4,694,500,000 frs., or 188,000,000*l.* Each hectare, which is represented by a capital of 1,167 frs., is mortgaged on an average to the amount of 217·41 frs., thus about one-fifth of the whole landed property of the kingdom is under mortgage.

V.—*Population.*

Various estimates have been made of the population of Italy up to the end of 1859, before the union of the new States. But as the census of the population was taken on the night of the 1st January, 1862, for the whole of the new kingdom, it will be better to commence with this authentic statement. The following table shows the ascertained number of inhabitants in each province, the superficies in square kilometres, and the number of inhabitants to each square kilometre. The territorial divisions are somewhat different from those into which the kingdom was distributed before 1859, which would increase the difficulty of making any comparison with former estimates. Of the 59 provinces, 26 only remained with the same limits as before. The other 33 were either entirely reconstituted or in some way modified.

The previous surveys also appear to have been of very unequal value, some carefully and in the northern provinces accurately made, and others contradictory and doubtful, especially in the southern provinces of the kingdom.

No doubt before the next census, new surveys will be completed throughout the country. (Appendix, Table II.)

The total population was very nearly 21,777,000 on 257,082 square kilometres of territory = 99,312 English square miles, showing a density of population of 88 inhabitants per square kilometre, or 219 per English square mile.

Lombardy appears the most densely peopled, having 134 inhabitants per square kilometre, then the Romagna 104, Piedmont and Liguria 103, after the cession of Nice with its 2,755 kilometres and 122,362 inhabitants. Sardinia is by far the most thinly peopled, having only 24 inhabitants to the square kilometre.

In density of population Italy amongst the nations of Europe is only exceeded by Belgium, the Netherlands, and Great Britain.

To the totals of the new kingdom there is added in the Annuario Statistico Italiano, the estimated population of other parts of Italy which are under foreign dominion, including the Roman Provinces, Venice, the District of Mantua, Trieste, Istria, and Gorizia, the Cisalpine parts of the Tyrol and Switzerland, Nice, Corsica, Malta, Monaco, and San Marino. The Roman Provinces and Venice alone would add (2,976,218) very nearly three millions of inhabitants, and 35,672 square kilometres of territory, and with the remainder gives a total estimated territory of 333,768 square kilometres, and 26,633,000 inhabitants.

The rate at which the population increases can only be properly estimated when the registers of births, deaths, emigration, and immigration are carefully kept up on the same plan throughout the kingdom. It would not therefore be prudent to attach too much importance to estimates made over different periods of years in the separate States before their union. It may suffice to say that the best computations before 1859, gives a rate of increase of about ·55 per cent., Sicily being the highest ·88 per cent., and Parma and Piacenza almost stationary, ·01 per cent.

Calculated upon the annual movement of the population since 1st January, 1862, the estimated population of the Kingdom of Italy on the 1st January, 1863, would be 21,929,000, and on 1st January, 1864, 22,105,000, of whom 11,062,000 were males, and 11,043,000 females.

At the same rate of increase, on the average of the two years, the number of inhabitants on 1st January, 1866, would be 22,386,000, the estimated rate of increase being ·64 per cent. per annum.

Population of Towns.—The Kingdom of Italy is divided into 7,720 communes, the town population of which in some places, especially in Tuscany, is very different from that of the commune, and both should be stated for comparison.

The communes, which on 1st January, 1862, had more than 100,000 inhabitants were—

	Population.	
	Town.	Commune.
Naples	418,968	447,065
Turin	180,520	204,715
Milan	196,109	196,109
Palermo	167,625	194,463
Genoa	127,986	137,986
Florence	114,363	114,363
Bologna	89,850	109,395
Messina	62,024	103,324

There were 9 communes of between 50,000 and 100,000 inhabitants, 62 from 20,000 to 50,000, and 71 from 15,000 to 20,000.

The population of the Kingdom of Italy is not very far below that of England and Wales. But the difference in the density of population in the chief towns is very remarkable. In the middle of the year 1866, the Registrar-General computes the number of inhabitants in—

London as	3,067,536
Liverpool	484,337
Manchester	358,855
Birmingham	335,798
Leeds	228,187
Sheffield	218,257

All much larger than the city of Turin, the capital of Italy.

There is reason to hope that at the next census a more minute enquiry will be completed as to the ages, the conjugal condition, and especially the occupation of the people in the different provinces, since the present meagre information is quite insufficient to solve the many important problems in vital statistics connected with the growth and prosperity of a great nation.

In fact provisions for a more accurate registration has already been made by a Royal Decree dated 31st December, 1864.

VI.—*Registry of Population.*

The effect of the census, taken 31st December, 1861, was naturally to show the need of a better registry of the movement of the whole population, and a Royal Decree, dated 31st December, 1864, provided such a registry.

It required that a register in the form given should be made and kept up by the syndics and golfalonieri, assisted by the communal councils and the local statistical committees.

The census of 31st December, 1861, corrected and completed by the changes which had occurred up to 1st January, 1865, was to be the basis of the new registry. After that date, the registry would contain every change in the condition of persons, families, and the population, by births, deaths, marriages, or by change of residence, which latter had to be declared both to the syndic of the commune, which the individual, whether native or foreigner, left, and to which he removed.

The Ministry of Agriculture, Industry, and Commerce, was charged with the duty of issuing the proper regulations for preparing, keeping up, and revising such registry.

The various regulations, sixty-three in number, provide for a very minute and complete register; and the form given shows for every family the name, relationship of each member of the family, profession, place and date of birth, whether single, married, or widower; date of moving into the commune, place of legal domicile, of present and last residence, of proposed change of residence, of leaving the commune, of date of death, and of any change in the civil condition of the individual.

These regulations are accompanied by a circular to the prefects, pointing out the utility and importance of accuracy in such a register, and that none but those who fear the course of justice, could imagine that such inquiries, meant for the public good, would interfere in any way with the true liberty of the subject.

If such registers be carefully kept for a few years, and a census taken at regular intervals, every information that could be desired relative to the vital statistics of the country, will be available to the statesman.

VII.—*Movement of the Population.*

In 1862, the total results may be stated as follows:—Marriages, 176,897; births, 833,054; deaths, 681,212.

Marriages.—The marriages were in—

		Per 1,000 Inhabitants.
Town communes (above 6,000 inhabitants)	54,503	8·21
Rural „	122,394	8·09
Total	176,897	8·12

Relative to the different provinces, the ratio of marriages in every 1,000 of the population may be stated as follows:—

Piedmont and Liguria................	8·09	Umbria..	6·07
Lombardy..	8·09	Tuscany	8·53
Parma and Piacenza	7·45	Neapolitan provinces	8·44
Modena, Reggio, and Massa	8·10	Sicily..	8·33
Romagna	7·57	Sardinia	8·27
The Marches	6·58	Total	8·12

If the assumed rate be taken at 1,000 per month, February would show the highest number 1,716, then November 1,470, and the lowest would be July 650, and December 644.

Births.—Of 833,054 births, 428,922 are males, and 404,132 females, being 106 to 100.

Parma and Piacenza shows the highest rate of male births, being 112·5 to 100, and Sicily the lowest, 104·5 to 100.

The town populations show the highest rate of births, being 4·1 per cent. of the total inhabitants, and rural 3·7 per cent., total 3·83 per cent.

In regard to fecundity of population, Sicily shows the highest, 4·28 per cent. of the total inhabitants, and Umbria the least, 3·34 per cent.

Dividing the number of births by that of marriages, the town communes give 5·01 per cent., and the rural 4·58 per cent., mean for the whole kingdom, 4·71 per cent. By this rule the Marches show the highest rate, 5·59 per cent., and Piedmont the lowest, 4·39 per cent.

Deaths.—The deaths in the whole kingdom, 681,212, were 351,890 males and 329,322 females, 106·85 to 100, a little more than the ratio of births; Lombardy showing the highest proportion, 108·7, and Tuscany the lowest, 102·6 to 100.

Averaging 1,000 in each month, August has the highest rate, 1,148, and April the lowest, 849.

In town populations the rate of mortality was 3·37 per cent., in the rural communes 3·02 per cent., total 3·13 per cent.

The duration of human life in Italy can hardly be ascertained without reference to the ages of the population, and I should hesitate to accept the mean duration, 26·2 years, or the probable lifetime, 31·9 years, deduced by this single year's experience for Italy, as correct. By this method England would give for the former 41·2 years, and the latter 47·1; and France 37·75 years, and 38·8 years respectively, placing Italy low.

Increase of the Population.—The result of this single year would show an increase in the town population of ·76 per cent., and in the rural ·68 per cent., total ·70 per cent.; Sicily being the highest, 1·40 per cent., and Parma and Piacenza the lowest, ·20 per cent.

On the whole there seems reason to conclude that whether from poorly remunerated labour, or the difficulty of maintaining families, the rural population showed fewer marriages and fewer births in proportion than the town populations, a subject, considering the large number of the agricultural population in Italy, well worthy of the attention of the philanthropist and the statesman.

VIII.—*Army*.

Without entering at all into political questions, I think it might be admitted that the army of Italy, relative to its extent of territory and the number of the population, would for some years after the union, be expected to be comparatively large. The kingdom of Italy is not even yet recognised by all the Governments of Europe; and there are still influences at work and hopes ready to be revived at the slightest signs of weakness, which in a newly formed kingdom may be assumed by the Government, to require an exhibition of military force which would otherwise in times of settled peace be considered a heavy drain on the resources of the country.

The effective strength of the army for 1865, gives a total of 13,276 officers and 209,045 troops of all arms, being 222,321 for the peace establishment, and 14,762 officers, 365,038 troops of all arms, with a reserve of 115,000 men, making a total of 494,800 men for the war establishment.

By a royal decree of January, 1862, the organisation of the standing army showed a much higher number divided into six corps d'armée:—

	Men.
Total infantry	227,796
„ cavalry	16,920
„ artillery and train	40,586
	285,302

which with fourteen legions of carabinieri, or gendarmes, under the orders of the Minister of War, 18,461 men, and a staff of 210 men, brings the total of the army of Italy up to close upon 304,000 men.

But in the army estimates for 1864, laid before the Italian Parliament, a much smaller number of troops than either of the above-mentioned is accounted for, the estimate for the total standing army being for 196,000 men. In the same year, the army estimates for the total force of the United Kingdom, including depôts of the Indian regiments and recruiting and other establishments, were only for 146,766 men.

In the session of 1863, by the returns laid before the Parliament, the army on the peace establishments for the future was to be considerably reduced, consisting of 157 generals, 15,377 officers of all ranks, and 227,250 sub-officers, corporals, and soldiers, which together with 2,742 employés of the military administration, would raise the total number to 245,526 men and 36,728 horses.

In time of war the infantry force is to be 274,000 men, the bersaglieri to be raised to 30,555 men, and cavalry 24,721 men.

IX.—*Navy.*

In July, 1865, the royal navy consisted of 106 vessels of war, armed with 1,468 guns. They were classed as follows:—

		Horse-power.	Guns.
	Screw Steam Vessels—		
1	Ship of the line, 1st class	450	64
9	Frigates, 1st class	450 to 600	440
7	„ 2nd „	300 „ 500	134
6	Iron-clad frigates 1st class	800 to 900	216
10	„ „ 2nd „	400 „ 700	200
4	Iron-clad gunboats, 1st class	200 to 300	32
4	„ „ 2nd „	74 „ 100	8
19	Gunboats (transports)	120 to 300	58
60	Screw steamers	—	1,152
	Paddle-wheel Steamers—		
14	Corvettes, 1st class	180 to 400	100
20	Smaller vessels and transports	100 „ 500	46
34			146
94	Total steamers	—	1,298
12	„ frigates, brigs, &c.	—	170
106	Total vessels of war armed with	—	1,468

They were manned by 11,193 sailors and engineers, and 660 working men, with 673 officers, of whom 2 were admirals, 3 vice-admirals, 10 rear-admirals, 22 captains of vessels, 36 captains of frigates first-class, 60 lieutenants of first-class, 90 lieutenants of second-class, and 150 sub-lieutenants.

The marines consisted of two regiments, comprising 192 officers and 5,688 soldiers.

At the commencement of 1864, the navy is stated to have consisted of 98 steamers, of 20,760 horse-power, with 2,160 guns, and 17 sailing vessels, with 279 guns, altogether 115 men of war with 2,439 guns; but this included a considerable number of transports with 2 guns each.

In 1863 the navy was manned by 10,927 sailors and 580 officers of all ranks, so that the naval force of last year appears slightly increased.

X.—*Finance and Public Debts.*

One of the most difficult problems yet to be solved by the statesmen and thinking public men of Italy, is the question of finance. It is generally assumed that taxation has reached its limit in the kingdom, and yet that the expenditure for State purposes is so necessary and moderate under the circumstances, that no important reduction can be made. The consequence is that the debt increases with alarming rapidity, and successive Ministries have broken up on this fatal rock. Yet it can hardly be admitted, that a country with such apparently unlimited resources should be unable to bear the weight of a national expenditure, which, if it can be proved to be necessary for the defence or the honour of the country is worthy of some sacrifices, or if not, that there should not be found some honest and able men to point out how and where it can be most efficiently and safely diminished.

When the various provinces of the new kingdom were united, they had each a considerable debt compared with the annual revenue of each State, and in the year 1860, the total stood as follows:—

	In 1,000 Lire.	£
Sardinian States	1,170,000	46,800,000
Lombardy	156,000	6,240,000
Romagna, the Marches, and Umbria	86,290	1,451,600
Modena, Reggio, and Massa	18,880	755,200
Tuscany	139,000	5,560,000
Parma and Piacenza	14,700	588,000
Neapolitan provinces	520,000	20,800,000
Sicily	187,000	7,480,000
	2,241,870	89,674,800

By a law of 10th July, 1861, all the obligations of the kingdom were inscribed into a "Gran Libro del Debito Publico," to which no further debt was to be added but by virtue of a public law. They were not to be subjected at any time to any tax, and the interest was never to be diminished or deferred. The balances of each year were first to be liable to the interest of the debt, and then to the extinction of the capital, and a special commission was appointed with powers for its perpetual continuance to make an annual report on the administration of the public debt, which is to be presented to Parliament by the Minister of Finance.

By a subsequent law, of 4th August in the same year, the assimilation of the old and new debts of the former provinces was effected.

Since 1861, an annual deficit to a considerable amount has been incurred, and on the 1st January, 1865, the public debt stood as follows:—

	1st January, 1865, in 1,000 Lire.	Interest in 1,000 Lire.	Debt.	Interest.
			£	£
Debt consolidated at 3 and 5 per cent.	4,001,728	195,992	160,069,120	7,839,680
Debt inscribed separately in the Great Book	280,687	12,704	11,227,480	508,160
Debt to be inscribed	123,211	6,054	4,928,440	242,160
	4,405,626	214,750	176,225,040	8,590,000
Redemption, charges, &c.	—	12,155	—	486,200
Total interest for 1865	—	226,905	—	9,076,200

On the 1st January, 1864, it stood at a total of 3,817,471,000 lire = 152,698,840*l.*, and the interest thereon to 197,417,000 lire, or 7,896,800*l.*, including a debt not inscribed in the "Great Book," requiring nearly an annual payment of 4,454,930 lire = 178,197*l.* for local obligations and communal bonds of the southern provinces.

The actual amount of interest on the debt to 1860, is stated to be 112,420,000 lire = 4,496,800*l.* On 1st January, 1862, it had risen to 157,042,000 lire on the debt inscribed, and 163,051,000 lire in all, and as above to 226,905,000 on 1st January, 1865, so that in the five years the interest has more than doubled or has increased at the rate of 22,897,000 = 915,880*l.* per annum. This includes the loan of 500 millions lire (20,000,000*l.*) in 1861.

The following are stated to be the deficits of each year since 1860:—

	Deficit in 1,000 Lire.	£
1860	416,419	16,656,760
'61	504,443	20,177,720
'62	350,935	14,037,400
'63	820,576	12,823,040
'64	234,241	9,369,640
'65	228,316	9,132,640
	2,054,930	82,197,200

Which it will be observed added to the debt of 1860 2,241,870,000 lire, total 4,296,800,000 lire, nearly makes up the total debt of 1st January, 1865, 4,405,626,000 lire.

The deficit has steadily decreased since 1861; and on examining the following summary of the estimates of receipts and expenditure for the three years 1864, 1865, and 1866, it will be seen that the principal increase in the expenditure is for the Ministry of Public Works and the Ministry of the Interior. These point to the sources of increased national income by affording facilities for trade and communication. The State railways were sold in 1864 for 200 millions lire = 8 million pounds. The sale of the State (including ecclesiastical) domains, valued at 423 millions lire = 16,920,000*l.* is proceeding gradually. (Appendix, Table III.)

In the order of indebtedness as compared with the debt per head of the populations of other European States, Italy stands after Great Britain, Holland, France, Spain, Portugal, and Belgium, but the Netherlands greatly exceed her in the proportion of interest of debt to each inhabitant, and Denmark is nearly on the same standing in this respect.

It is evident that the continual increase of debt by deficits to so large an extent in time of peace could only be admitted as reasonable if the whole excess over revenue was applied to develop the agricultural and commercial resources of the country, and thus by increasing the riches and prosperity of the State, furnish the means hereafter of paying off the capital and diminishing the extraordinary taxation. That a considerable portion of the deficit in Italy arises from these causes is clear from the statistics of railroads, irrigation, and public works, but it does not account for the whole, and Italian Statesmen are now busy with the means of devising how to raise the permanent income to what seems the permanent annual expenditure. The budgets of S. S. Sella and Scialoja have been submitted to a commission of fifteen deputies, with the view of selecting the best points of the two. The conclusion of this Commission is the more pressing as the deficit is now supposed to be nearly 1,000,000*l.* per month, and the proposal for a voluntary tribute from all classes, though begun with so much spirit in the great cities, is very unlikely to yield more than two years deficits, and would certainly not be submitted to as an annual voluntary taxation.

XI.—*Means of Communication.*

The magnificent roads which traverse the loftiest mountains, give to Italy a character for its communications with foreign States of which few other countries can boast. The Simplon, Mont Cenis, and Stelvio, the St. Gothard, the Splugen, the Brenner, recall to the mind not merely the triumphs of engineering skill but the wonderful beauty of natural scenery through which they pass. But there still remain many arduous works to be undertaken to bring together the scattered population of the different provinces. The Government seems fully alive to the importance of the work, and large sums have been spent in completing the ordinary roads, at the same time that the railways and canals are being prosecuted with vigour.

Since 1862, even in the Sicilian provinces, bridges and ordinary roads had been commenced to be finished in five or six years, which would cost the State 5,241,432 lire, and others to succeed shortly to the extent of 2,604,115 more, whilst others were only postponed, the cost of which would be an additional 10,000,000 lire. Besides the construction of tho State railways, the Ministry of Public Works had become pledged to the execution of works for new ordinary roads to the extent of 40 millions lire, of which 24 millions were for national roads in the Island of Sardinia, and 14,000,000 for ordinary roads in the southern provinces, the small remainder being for extensions to the French frontiers, and in the continental Sardinian provinces.

The following summary shows the total length and cost of the national roads in the different provinces; but it must be remarked that it does not include the communal roads, nor the private roads which the communes have to maintain. (Appendix, Table IV.)

XII.—*Railroads.*

In 1859, after twenty years discussion, only one of the main lines, that from Susa to Venice, had been finished. The line from Turin to the Adriatic did not go beyond Piacenza. In all the provinces which formed the new kingdom, there were only 1,472 kilometres of railways. In the four years 1859 to 1863, 1,287 more had been opened.

In 1859 only 266 kilometres were in course of construction, and 854 kilometres projected were under consideration. In 1863 all the lines decreed or allotted were 4,464 kilometres.

The following table shows that in 1863 3,446 kilometres were in operation, 2,304 in course of construction, and that when all the lines which had then been decreed were completed, Italy would possess 8,057 kilometres of railroads = 5,007 English miles. (Appendix, Table V.)

From the natural formation of the country, the Italian systems of railroads find their centres in Piacenza and Bologna, from whence the passes of the Alps open to France, Switzerland, Germany, and Hungary, and the lines on the eastern coasts of Italy form the easiest communication by land, to reach the Mediterranean and the Levant.

In a report on the Italian State railways for 1862, we find the

State railways in that year to have a length of 689 kilometres; in 1861 they were 650.

The number of kilometres run by—

Locomotives of fast trains were	1,733,295
„ slow „	1,732,326
	3,465,621

The number of journeys was 84,348, and the carriages transported 1 kilometre, fast trains 18,332,825; slow trains 25,066,629; the mean length of journeys being, fast 10·6, slow 14·5 kilometres.

By the following table we see that the number of passengers was less in 1862 than in 1861, being 5,338,790 in the former, and 5,434,402 in the latter year. The military in the former year were 18½ per cent. of all the passengers. (Appendix, Table VI.)

The carriage of merchandise, however, had increased considerably from 1,157,576 tons in 1861 to 1,342,285 tons in 1862. The carriage of horses and cattle had also increased 30 per cent. in 1862.

XIII.—*Telegraphs.*

For the year 1863 the receipts for the State telegraphs of Itlay were 2,950,695 lire, for actual payments, and 4,726,576 lire, for Government despatches, total 7,677,271 lire, = 307,080*l.* The expenses ordinary 4,029,211 lire, extraordinary 436,853 lire, total 4,466,064 lire, = 178,640*l.* The actual payments were to the ordinary receipts as 3 to 4 (for 1862 they were as 2 to 3), and the actual, together with the estimate for Government despatches which were not paid for, were to the ordinary expenses as 19 to 10 (nearly 2 to 1), and to the total expenses as 7 to 4.

	At Close of 1863.	Before the Union.	Increase since the Union.
1. Kilometres of length	13,032	7,833	5,199
2. „ of single lines	25,561	12,012	13,549
3. Number of stations	459	248	211
4. Kilometres of submarine telegraphs	524	—	524

The following comparison shows the relative position of Italy, France, Switzerland, and Belgium, about the years 1862 and 1863, in the length of telegraph lines and facilities of communication thereby. (Appendix, Table VII.)

XIV.—*Post Office.*

During 1862 the number of letters posted in the 2,368 offices of the kingdom was 71,502,779, of which 44·9 per cent. were prepaid, and 55·1 per cent. unpaid.

The official correspondence, free, was 21,467,000, and 40,930,530 stamped, making a total of 133,900,309, producing 10,500,000 lire, = 420,000*l.*

The foreign letters to and from Italy were 7,029,795, against 6,516,779 in the previous year; the greatest increase being with Great Britain, Belgium, Turkey, Egypt, and Switzerland.

The maritime postal service was entrusted to 4 private companies, employing 36 vessels, with a tonnage of 20,206; and 9 building of 6,850 tons more. The lines are principally between Sicily and Sardinia, Naples and Genoa, although there is also a line to Tunis and Malta.

	1862.	1863.
The total receipts were (in 1,000 lire)	11,885	14,560
" expenses	16,498	18,537
Excess of cost	4,613 = £184,520	3,777 = £151,080

Showing a loss in 1862 of about 39 per cent., and in 1863 of 26 per cent., which is very different from the experience of England and France.

XV.—*Societies for Mutual Aid* (*Friendly Societies*).

The objects contemplated by these societies are relief in sickness, with pensions in old age, pensions to widows and orphans, procuring work for the members, evening schools for the children of members, loans, receiving deposits to invest at interest, obtaining provisions, &c., at cost price, furnishing materials for work, and enabling skilled workmen to travel in search of employment.

For every 100,000 inhabitants, the total number of societies in the whole kingdom was 2·03, and the number of members 512, and the number of female members was 9·14 per cent. on the males. The number relieved was 29·6 per cent. of the members free, and the number of days' sickness to each person sick was 16·4 days. (Appendix, Table VIII.)

From the records of 58 societies in 1862, it appears that 35 per cent. of the members were between 30 and 40 years of age, that on an average of about 9,000 members living there were 97 deaths, or 1·08 per cent., 1,627 relieved in sickness, or 18 per cent., and 3·78 days of sickness for each member, the mean duration of sickness being 21 days—all which are very favourable results.

But in the whole kingdom the number relieved was 29·6 per cent. of the total free members, and the daily sick pay was a maximum of 1·12 lire = nearly 11*d.*, to a minimum of 0·64 lire or 6*d.* (Appendix, Table IX.)

In 1862, the receipts of 374 societies were 1,411,392 lire = 56,456*l.*, and the total payments 787,995 lire = 31,490*l.*, thus divided—

	Lire.
Expenses of management	163,668
Sick pay	424,373
Medicine and medical attendance	29,084
Pensions for old age	54,671
Aid to widows and orphans	29,122
Various charges	87,077
Total	787,995

In town districts the total number of societies was 250 with 83,989 members, and in rural districts 172 with 27,619 members, total 422, with 111,608 members. Of these, 26,450 were relieved, and for 25,400 of them there were 406,247 days of sickness.

In 374 societies the capital on 31st December, 1861, was 2,092,351 lire = 83,680*l.*; and on 31st December, 1862, 2,715,748 lire = 108,630*l.*, showing an increase of 623,397 lire = 24,950*l.* in the course of the year.

XVI.—*Education.*

The following brief summary of the state of education in Italy is abstracted from that excellent little work, the "Statesman's Year "Book."

The wealth of the Italian clergy has been greatly reduced since 1850, when the Bill of Siccardi, annihilating ecclesiastical jurisdiction and the privileges of the clergy, passed the Sardinian Chambers.

In 1861 the law was extended to the whole of the kingdom of Italy.

In 1855 the regular income of the whole Sardinian clergy amounted to 18,000,000 lire (720,000*l.* per annum), and in that year there were confiscated, on the continent and in the Island of Sardinia, the revenues of 2,099 clerical establishments, comprising 7,871 individuals (of whom more than 1,200 were nuns), and possessing an income of 3,641,000 lire = 146,450*l.*

In February, 1861, when the monastic orders were partially suppressed in the Two Sicilies, the religious establishments for men were found to be 1,020, containing 13,611 inmates, of whom 8,899 lived entirely on alms. There were also 272 nunneries with 8,001 inmates, possessing an income of 4,773,000 lire = 24*l.* per head.

Under the new Italian Government a great part of the property confiscated from the monastic establishments has been devoted to the cause of public education, besides an annual credit of 15,000,000 lire (600,000*l.*), and since 1860, there have been opened throughout the kingdom 33 great model schools, of which 10 were in the Sardinian

States, 6 in Lombardy, 4 in the Emilia, 6 in the Marches and Umbria, 2 in Tuscany, and 5 in the southern provinces.

In the kingdom of the Two Sicilies it was found, in 1860, that there were 3,094 large parishes which had no schools whatever, and 920 others in which the public instructors were themselves devoid of the most elementary knowledge. But by the end of 1861, the new Government established in the ex-kingdom of Naples 1,054 elementary boys' schools, the pupils in which numbered 23,569, and 778 elementary girls' schools, with 18,912 pupils. In 1862 the boys' schools rose to 1,603, with 60,250 pupils, and the girls' schools to 922, with 30,567 pupils. In the same time, that is little more than a year, the evening schools increased from 18 to 234, and their frequenters from 911 to 9,804.

In the whole kingdom the scholars in the schools are stated to have increased from 700,000 in 1862 or 1863, to 1,000,000 in a single year.

An interesting official report has just been issued on the state of the public libraries in 1863, by which it appears that in the whole kingdom there were 210 public libraries, with 4,149,000 volumes, being the next largest number to those in the public libraries of France, and that in 97 of them, which were the most frequented, there were in the half-year November to April, 551,000 readers, and in the half-year May to October, 386,000 readers, total 937,000.

XVII.—*Commercial, Industrial, and Credit Companies.*

In a report made to the King by the Minister of Agriculture, 12th February, 1865, on the industrial and other companies, the numbers are stated to be 570, with a total capital of 2,576,643,225 lire = 103,065,721*l.*, of which 186, with capital 352,032,278 lire, had ceased; 9 with capital 7,762,500 lire were winding up, and 375 with a total capital of 2,216,848,447 lire = 88,673,920*l.* were existing. (Appendix, Table X).

XVIII.—*Natural Products of the Soil.*

Timber.—It is calculated that there is 1 hectare of woodland to 6·47 open ground. The destruction of the forests has been allowed to proceed without thought for the future, and very little attention has been given to the introduction or cultivation of foreign trees likely to thrive in the soil. The question is becoming of great importance, as fuel for the poor during the winter months is rising to an exorbitant price.

Grain.—The average annual product of grain is calculated to be 35,000,000 hectolitres = 96,885,000 bushels. The produce of an hectare is 15 to 27 hectolitres; the quantity of seed per hectare 1·80 to 2·80 hectolitres. Notwithstanding the rich quality of the ground in many places, the produce is by no means equal to the demands of the population, and Russia, Egypt, and America, send in largely foreign supplies. With encouragement given to native cultivation, and especially by the establishment of land credit companies, and the introduction of machinery into agriculture, Italy could easily supply the wants of its own population and become a great exporting country. The produce of barley, rice, and other grains, is computed to be 65 millions of hectolitres, or 3 hectolitres for each inhabitant.

Olive Oils.—The annual produce is estimated at 1,522,372 hectolitres, and a value of 112,810,873 lire = 4,512,440*l.*

Rice.—This product is largely cultivated in Upper and Middle Italy, where it was introduced in the fourteenth century. It is grown in Italy in very large quantities, and is of the highest quality. The best grounds yield 50 per cent. In the Novarese and Lomellina, an hectare of rice ground will produce 450 lire, and after deducting every expense, leave net 280 lire. The price for the most part depends on the cost of irrigation, but much discussion has arisen whether the cultivation does not injuriously affect the health of the population. On the other hand, it is contended that by regulating the streams, and preventing them from becoming stagnant, not only could places sufficiently removed from towns and populated districts be successfully cultivated without risk, but that the marshes and swamps may be turned to comparatively wholesome localities by the judicious system of irrigation required for the cultivation of rice, and thus the malaria and marsh fevers of the stagnant pools and low lying grounds be diminished.

In Tuscany and the southern provinces, the area of cultivation of rice is not at present known, but in the other provinces we find—

	Cultivated in Rice.	Produce.
	Hectares.	Hectolitres.
Piedmont	63,768	637,680
Lombardy	40,632	480,720
Roman States	6,938	208,192
Modena	6,314	92,042
Parma	1,600	16,000
	119,247	1,434,634

The average value of the crop is stated to be 28·91 frs. per hectolitre, which would give the total value of the crop as 41,475,000 frs. = 1,659,000*l.* Another computation makes the total surface 145,000 hectares, having an approximate value of 435 millions lire, and the rice produce 1,444,000 hectolitres, value 40 millions lire, or 9·93 hectolitres, and value 280 lire per hectare.

Wine.—No doubt the better cultivation and manufacture of the wines of Italy would lead to a great increase in their exportation. The soil seems suitable for every description, and the vines of Hungary, of Southern France, of the Cape of Good Hope, and the Canaries, might again be introduced to vary the quality and taste. Though not much known in this country, the wines of Astï, Orvieto, Montepulciano, Syracuse, the Lachryma Christi, and Marsala, might easily obtain a favourable reception amongst other varieties. The principle exports of wine are from—

	Hectolitres.	Value, Lire.
The Old Provinces	245,387	10,409,439
Modena, Reggio, and Massa	229,615	9,033,830
Naples	61,928	907,870
Sicily	—	24,753,927
Venice	92,307	1,500,000
Trieste, Istria, Gorizia	—	800,000

The total production of wine in the new Kingdom is estimated at 20,273,771 hectolitres, and a total value of 376,323,000 lire, or 15,052,920*l.*

Tobacco.—In Italy this product is in part a Government monopoly, but the culture is subject to great inequalities of condition. In Sicily it is free; in Sardinia it is placed under the Direction General of State Monopolies, with Government agents; but in the Island of Sardinia, it is nearly free. The best produce seems to be in Sicily, Umbria, and the Marches. It is difficult to ascertain the total value of the product, but by a recent estimate, the Neapolitan provinces produce 1,345,000 kilograms, worth about 636,000 lire; in the Marches the produce was 257,000 kilograms; Venice yielded 397,000 kilograms; and Corsica 122,000 kilograms. The total quantity produced in the new kingdom is estimated to be about 1,602,165 kilograms, value 2,197,565 lire, and in all Italy 3,204,330 kilograms, value 4,395,130 lire.

In 1861 the quantity obtained by the Government was about 20,000 quintals of native production, estimated at 80 lire per quintal = 1,600,000 lire, and 100,000 quintals purchased from foreign countries, at an average of 120 lire per quintal = 12,600,000 lire total 13,600,000 lire, or 504,000*l.*

Seeing the small proportion of native produce to foreign, and the capabilities of the soil, there can be no doubt of the advantage of the Government relinquishing the system of monopoly in this article.

Cotton.—In the excitement caused by the expected dearth of cotton for our manufactories, the claims of Italy to aid in the supply were not forgotten. Italy possesses many seacoast localities and vast uncultivated plains fit for its culture, and in conjunction with Malta and the islands of the Archipelago, furnished, before India and the United States took precedence, a large part of the European supply. It is still capable of yielding the finest kinds, some of which attracted much attention at the Great Exhibition in London.

The cotton zone in Italy extends up to 43° north, having a surface of 154,000 square kilometres = 59,490 square miles, with 10 millions of inhabitants. The best cotton is obtained from the Neapolitan provinces (especially near Salerno and Naples), from Sicily and the Island of Sardinia, and the mean produce may be taken at 450 kilograms per hectare. It is calculated that at this rate the Italian landowner could obtain 396 lire = 15·84*l.* per hectare, basing the price of cotton at 88 cents. per kilogram, or about 4*d.* per pound, and assuming the full cost of cultivation at one half the minimum price in those districts at which the cotton is sold. But it does not appear clear that in this estimate allowance has been made for the increase in the rate of wages which may be reckoned upon to follow the greater demand for labour. Still there is a wide field for active efforts in a country so suitable for its production yet little cultivated.

In Sicily 20,000 metrical quintals of cotton, and 40,000 quintals of seed are given as the annual production; in the Neapolitan provinces 22,000 quintals of cotton and 44,000 of seed; in Malta 19,325 quintals of cotton, 38,383 of seed. Total 61,325 quintals cotton, and 122,383 quintals seed; valued at 8,679,710 lire = 347,190*l.*

The summary of the products of the soil may be stated as follows:—

	New Kingdom.	All Italy.
	Hectolitres.	Hectolitres.
Corn, barley, rice, and other cereals	65,008,847	74,634,889
Chesnuts	5,284,142	5,762,182
Potatoes	9,366,893	10,143,330
Dry vegetables	3,862,010	4,299,708
Oil	1,552,372	1,775,256
Wine	20,273,771	—
	Hectares.	Hectares.
And the Lands under Cultivation—		
Agricultural land	10,011,162	11,899,667
Natural and artificial meadows	859,701	1,389,089
Rice grounds	119,436	143,497
Olive „	552,384	601,331
Chesnuts	579,910	643,975
Woods	3,926,987	4,835,529
Pastures	5,091,820	6,717,939
Stagnant valleys and marshes	1,018,702	1,202,334
Uncultivated lands	2,615,175	3,116,412

XIX.—*Commerce.*

Previous to the union of the new provinces, the commercial statistics are not all given to the same date; but as a comparison has been made, as nearly accurate as possible, in the third part of the "Annali," it may be well to record the totals. The total imports for the provinces of the new kingdom about the year 1858 were 607,538,000 lire, or nearly 24,302,000*l.*, and including, as the returns do, Rome, Venice, Trieste, and the Italian Tyrol, to 800,251,000 lire or 32,610,000*l.* The principal articles of import were cereals, sugar, cotton, woven silk, and metals; coals also figure to the value of 417,000*l.*

The exports at the same date amounted in value from the provinces of the new kingdom to 569,934,000 lire, or 22,797,000*l.*, and, including the other States, to 680,720,000 lire, or 27,229,000*l.* Of these silk forms the principal product exported, being in value from the new kingdom 184,785,000 lire, and from all Italy 218,363,000 lire, or from about 7½ to 8½ millions sterling, principally from Lombardy. Olive oil is also an important item. Tuscany partakes largely in this commerce by its borax, timber for building, straw for hats; the Sardinian provinces, wine, brandy, and cattle; Naples by its oils and chemical products; and Sicily by its sulphur, wine, oranges, and dried fruits. (Appendix, Table XI.)

By a summary of the commerce of Italy with different countries, in 1861, it appears that the only countries which take in return more from Italy than they send there, are Switzerland and Russia. The balance of Italian exports to the former is 23,181,000 lire, about 927,240*l.*, and to the latter 5,317,000 lire = 212,680*l.* From England the excess of imports into Italy is 105,744,000 lire = 4,229,760*l.*, and France 32,834,000 lire = 1,313,360*l.* All the other countries also show the imports into Italy greatly in excess of Italian exports to them. (Appendix, Table XII.)

But a more recent work, issued by the Ministry of Finance, gives a more correct and careful analysis of the commerce of Italy in the year 1861, comparing the commercial with the official values, and distinguishing the articles exported or imported to or from each foreign country, with the official and commercial values, and also whether they entered by land or sea.

The summary for 1861 is as follows:—

	Imports into Italy.		Exports from Italy.	
	Commercial Value in 1,000 Lire.	Official Value in 1,000 Lire.	Commercial Value in 1,000 Lire.	Official Value in 1,000 Lire.
By land	303,476	272,860	323,035	207,349
By sea—				
National flag	266,771	231,152	143,600	108,338
Foreign „	353,431	345,307	92,305	72,609
Total	923,678 =£36,947,120	849,319 =£33,972,760	558,940 =£22,357,600	388,296 =£15,531,840

Examining the principal articles of import and exports, we find—

	Imports.			Exports.	
	Commercial Value in 1,000 Lire.	Official Value in 1,000 Lire.		Commercial Value in 1,000 Lire.	Official Value in 1,000 Lire.
Cotton and similar manufactures	175,841	231,695	Silk and silk goods	251,523	149,488
			Liquors, &c.	76,056	48,307
Silk	139,253	84,705	Corn and cereals	31,186	21,730
Colonial produce	124,358	101,001	Colonial produce	29,676	23,522
Common metals	57,992	39,188	Mercery, hardware, &c.	26,294	20,171
Corn and cereals	45,120	43,310			
Liquors and oils	47,877	32,062	Timber	18,191	15,591
	610,441	531,961		432,926	278,909
Fourteen other classes	313,237	317,358	Fourteen other classes	126,014	109,487
Total	923,678	849,319	Total	558,940	388,296

In regard to cattle and other beasts, the total number imported were, in commercial value, 7,268,805 lire, and in official value 5,368,560; but the exports amounted to, in commercial value, 13,692,342 lire, and in official value 8,574,136 lire.

The principal countries with which commerce was interchanged, were—

	Exports and Imports together. Commercial Value in 1,000 Lire.	£
France..............................	403,149	16,125,960
England	216,662	8,666,480
Switzerland....................	230,212	9,208,480
Austria	224,343	8,973,720
Russia..............................	35,553	1,422,120
United States	34,085	1,363,400

The number of ships which entered and cleared from the commercial ports, including sailing vessels and steamers, were—

	Entered.		Cleared.		Total.	
	Number.	Tonnage.	Number.	Tonnage.	Number.	Tonnage.
The New Kingdom	31,818	2,922,967	31,745	2,965,313	63,563	5,888,279
All Italy (including Venice, &c.)	74,506	5,249,181	74,134	5,274,725	148,640	10,523,895

The most important of the Italian ports is Leghorn (Livorno)

and Genoa, in which, during 1860, the following were the entries and departures:—

	Entered.							
	Sailing.				Steam.			
	National.		Foreign.		National.		Foreign.	
	Number.	Tons.	Number.	Tons.	Number.	Tons.	Number.	Tons.
Leghorn ..	7,119	244,384	1,254	159,701	298	32,332	619	183,188
Genoa	6,955	367,884	911	163,370	956	110,031	605	178,334

	Cleared.							
	Sailing.				Steam.			
	National.		Foreign.		National.		Foreign.	
	Number.	Tons.	Number.	Tons.	Number.	Tons.	Number.	Tons.
Leghorn ..	7,109	245,116	1,263	160,517	300	32,471	648	182,888
Genoa	7,068	368,897	903	161,797	956	110,031	605	178,334

Italy, as a peninsula, possesses a very long coast line, even greater than France or England, computed at 5,400 kilometres, of which more than 2,000 belong to the islands, and 3,326 to the peninsula.

The principal ports of Italy are, in the Mediterranean, Genoa, Cagliari, Leghorn, Civita Vecchia, Naples, Palermo, Messina, Syracuse, Catania; on the Adriatic, Brindisa, and Ancona; and for the above official statistics, Venice, Trieste, &c., have been included.

Some of the largest cities of Italy are on the sea coast: Naples with 447,000 inhabitants, Palermo with 187,000, and five or six others with above 100,000 inhabitants each.

The population dependent on the fisheries, or other maritime occupation, was computed on 31st December, 1861, at 137,360.

	Number.
Captains, masters, pilots, &c.	13,465
Shipbuilders	322
Seamen and boys	86,644
Artificers...	5,864
Bargemen	5,790
Fishermen	25,275
Total	137,360

There seems, indeed, every encouragement for the increase of ship building and of the mercantile navy. On the Alps and Appennines, and in many of the islands, excellent timber is found; and the iron of Elba and Lombardy, and the hemp in the valley of the Po, may supply other industries with the best materials for labour in this service.

The mercantile navy was stated in 1860 for the kingdom of Italy at 16,500 vessels, and 666,024 tonnage, whilst the steamers are set down as 118, with a tonnage of 32,894, but 61 of these, with 22,062 tons, belong to the Austrian Lloyd's, leaving 57, with 10,832 tons, for the maritime ports of the kingdom of Italy.

More complete returns relating to international commerce and the coasting trade, were published for 1862.

The foreign trade showed a total of arrivals and departures of vessels, 40,692, tonnage 5,801,843, of which 20,188 entered, and 20,504 cleared from the ports of the new kingdom, including steamers 3,576 entered, and 2,418 cleared.

Sailing vessels formed a proportion of 83 per cent., and steamers 17 per cent., and of the former 61 per cent. bore the national flag, and of steamers only 21 per cent.

The coasting trade included 173,695 vessels from port to port entered and cleared, with a total tonnage of 8,495,802; 87,795 entered and 85,900 cleared. Only 16 in 1,000 bore a foreign flag; but of 7,441 steamers entered and included in the above, 19 per cent. were foreign.

As these numbers of vessels and tonnage appear not to be the actual number of vessels engaged in the trade, but the arrivals and departures of vessels from the total ports of the kingdom, they can only be compared with those of other countries if similarly classified; but it appears by a comparison, that the activity of the coasting trade in Italy is very great. This may arise in great measure from the smaller facilities existing for the traffic to the interior by land, and the greater cheapness of water carriage to the nearest places on the coast.

	Foreign Trade. Ships Entered and Cleared.		Coasting Trade. Ships Entered and Cleared.	
	Number.	Tonnage.	Number.	Tonnage.
France, 1861	66,218	10,173,930	177,448	7,660,192
Spain, '60	14,588	1,697,775	97,741	3,775,548
Austria, '60	10,107	1,345,677	139,497	4,484,080
Italy, '62	40,692	5,801,843	173,695	8,495,802

So far as regards the commerce of Italy with Great Britain, we have the means of comparing the last three years in the trade and navigation accounts of the United Kingdom, recently issued, so as to see the increase or decrease of British commerce with the five great provinces of the kingdom. (Appendix, Table XIII.)

To Sardinia, including the island, there has been a falling off in value of British exports from 2,199,000*l.* to 1,529,000*l.*, each year showing a decrease on the preceding.

To Tuscany, on the other hand, it has fluctuated; but on the whole shows an increase from 1,063,000*l.* in 1861, to 1,131,000*l.* in 1865.

To Naples the exports were highest in the middle year. In 1861 1,088,000*l.*; in 1863 1,627,000*l.*; in 1865 1,584,000*l.*

To Sicily there was a great fall in the exports of 1862 as compared with 1861, but in 1865 they had advanced considerably towards the first value, being in 1861 984,000*l.*, in 1865 868,000*l.*

On the whole the smallest value was in 1862, 5,056,000*l.*, and the largest in 1863, 5,901,000*l.*; the year 1865 showing 5,377,000*l.* exports to the kingdom of Italy, and about 890,000*l.* to the Papal ports in the Mediterranean, to Venice, and Illyria.

Considering the population of Italy, these values of exports from England may be considered insignificant, being below even those to Turkey, Egypt, and the Brazils, and only about one-fourth of the exports to the United States. But we trust that with the new development of the agricultural resources of Italy, with its cotton and silk, oil, wine, minerals, &c., a much greater impetus will be given hereafter to our mutual commercial relations.

XX.—*Conclusion.*

It is impossible, within the time for which I can venture to claim your attention, or the space allowed in the *Journal*, to do more than thus present the mere outlines of a few of the various subjects which show by statistics the condition of the new kingdom of Italy. The distribution and sale of church property, education and crime,*

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* Whether brigandage has a political character or not, it is equally essential to the progress of the country and the credit of the Government, that it should be put down at any cost. The Italian Government has acted with earnestness and decision.

In the Neapolitan provinces, between 1860 and 1864, there have been—

Brigands shot (executed)	1,038
Killed in conflict with the troops	2,413
Total killed	3,451
Taken prisoners	2,768
Total	6,219

And in the same period 932 brigands have voluntarily surrendered, total 7,151. The brigands are in great measure recruited from, and are supported by, the public libraries, manufactures, irrigation, and a number of other topics, deserve more minute inquiry, and also that all the statements should be brought down to more recent periods. Perhaps after the meeting of the Statistical Congress at Florence, a report of its proceedings may enable us to embody more full and recent information on all these topics.

Italy has a great future before her. She can afford to wait the course of events which may, without her action, bring within her confines the outlying provinces, consolidate her power, and unite the scattered populations into one. There is work enough at present for her ablest financiers in studying the productiveness and smallest pressure of taxation, so as to restore the balance of revenue and expenditure. Her most earnest and ardent patriots may fully employ themselves in teaching how to bring out the capabilities of the soil by irrigation and improved agriculture, to facilitate internal trade by new railways and roads, and to encourage the growth of those products which will best lead to the increase of foreign commerce. The social reformer has problems difficult enough to deal with in the education of the lower classes, and in the eradication, in some

peasantry, who share largely in the spoils, charging fabulous prices for all the provisions and articles of luxury for which the brigands so freely lavish their ill-gotten gains, enormous as these sometimes are, 4,000*l*. to 5,000*l*. being sometimes asked even from native proprietors to free them. The peasants wilfully conceal their knowledge of the haunts of the brigands, and give false information to the troops. It would otherwise seem impossible for the bands long to survive the energetic pursuit made after them. From all accounts, the hardships and dangers they undergo are almost incredible. Long night marches by dangerous mountain paths, only a few inches wide, incessant storms and want of shelter, since even their caves only afford safety or repose to a few at a time; unable to light fires lest the smoke should discover them; sometimes without food for two or three days, then a glut of provisions (bread without meat, or meat without bread) greedily devoured. Mr. Moens states that in his short captivity of three months, 4 out of a band of 40 were lost, one dashed to pieces by a fall from a precipice, besides a woman accidentally, but severely, wounded by a shot in the arm, which had to be amputated. Their resting places are constantly beaten up by the troops, though they have occasionally miraculous escapes by descending or climbing the steepest mountains with the agility of goats.

It would appear a more efficient plan to organise local bands of young men from the middle classes, or agricultural proprietors, who are most injured by the inroads of these desperadoes, as the work is unworthy of the regular army. The cutting of military roads through the disturbed districts, though a costly process, appears to have been very efficient wherever it has been accomplished, and education amongst the peasantry, now so earnestly pressed, may do more hereafter. But in the meantime every district should be compelled to pay the whole price of the ransoms extorted therein, and the cost of the extermination of these ruffianly hordes within their boundaries; making the contributions fall upon that class who profit so largely by the system of plunder—the peasantry, the shepherds, and the small shopkeepers. They might then find it their interest to aid the Government in the suppression of this national disgrace, which must ever be a blot upon the character of the fallen Governments, who so long permitted it whilst they were in power, or used it for political purposes after their fall.

districts, of habits, the growth of centuries of neglect, which render life and personal liberty unsafe, and drive away capital from the scene of improvements where it is so much needed.

Therefore it must be admitted Italy has enough to employ all her rising energies; but blessed with a country of unexampled fertility, with a climate so various that all the productions of the most temperate zones are combined with those of the tropics; with fisheries in numerous seas; with long lines of sea coast, and the finest harbours for her coasting trade; with the raw materials for manufactures at home or abroad; with mining districts almost wholly unexplored, and with railroads directly in the way of the great traffic between England and her eastern possessions, the Italian nation may look for triumphs of peace worthy of the ancient glories of her history, and of those noble aspirations for constitutional freedom and social progress which have enabled her to take so suddenly, and maintain so firmly, her present honourable position amongst the foremost nations of Europe.

APPENDIX.

Table I.—*Territory of Italy* (p. 201).

	Surface in Hectares.	Productive Surface.		Mr. L. S. Sackville West's Report, Productive Surface.
		Hectares.		Hectares.
Piedmont and Liguria	3,729,273	3,327,656	The Old Provinces	5,333,845
Lombardy	1,934,506	1,673,409	Lombardy	1,680,948
Parma and Piacenza	546,974	525,320	Parma	525,320
Modena and Reggio	656,643	598,539	Modena	488,176
Tuscany	2,152,035	2,084,926	Tuscany	2,073,958
Romagna	1,000,821	963,135	Romagna	963,135
The Marches	951,029	924,575	The Marches	924,575
Umbria	975,042	945,073	Umbria	945,075
Benevento	14,786	—		
Pontecorvo	8,748	—		
Naples	7,628,163	6,195,176	Naples	6,255,320
Sicily	2,618,259	2,399,360	Sicily	2,402,098
Sardinia	2,434,440	2,148,909		
	24,650,719	21,786,078		21,592,450

TABLE II.—*Population of the Kingdom of Italy according to the Census, 1st January,* 1862 (p. 202).

	Inhabitants.	Superfices in Square Kilometres.	Inhabitants per Square Kilometre.
Piedmont and Liguria	3,535,736	34,312	103
Lombardy	3,104,838	23,085	134
Parma and Piacenza	474,598	5,740	83
Modena, Reggio, and Massa	631,378	6,567	96
Romagna	1,040,591	9,998	104
The Marches	883,073	9,716	90
Umbria	513,019	9,646	53
Tuscany	1,826,334	21,520	85
Naples	6,787,520	85,231	80
Sicily	2,391,802	27,017	89
Sardinia	588,064	24,250	24
Total of the new kingdom	21,776,953	257,082	85
Roman provinces, 1853	682,489	11,790	58
Venice, 1857	2,293,729	23,882	96
Mantua, „	152,327	1,262	121
Trieste, Istria, and Gorozia, 1857	541,758	8,524	64
Tyrol (Cisalpine), 1857	518,059	15,742	33
Switzerland (Cisalpine), 1860	131,256	3,529	37
Nice, 1858	122,362	2,755	44
Corsica, 1862	252,889	8,747	29
Malta, '60	147,683	375	394
Monaco, '57	7,627	23	329
S. Marino, 1850	5,700	57	100
All Italy	26,632,832	338,768	80

TABLE III.—*Finance and Public Debt of the Kingdom*

	Estimated Receipts (in 1,000 lire).		
	1864.	1865.	1866.
Land tax	112,010	124,680	139,827
Tax on moveable property	13,930	57,200	63,466
„ the transfer of property	69,256	76,500	73,000
Customs and maritime dues	63,200	60,700	60,200
Octroi duties	22,825	32,000	28,100
Government monopolies (salt, tobacco, powder)	111,300	96,200	136,500
Lottery	40,042	40,000	40,000
Rents of State property	19,222	12,217	48,422
Revenue of public service (railway)	26,165	20,000	28,563
Post office	15,000	18,500	—
Telegraph	3,170	6,600	—
Miscellaneous	25,892	24,518	17,528
	522,012	564,065	635,606
Extraordinary receipts, sale of domains, &c.	124,107	61,487	33,833
	646,119	625,508	669,439

TABLE IV.—*Ordinary National Roads* (p. 211).

	Open.		In Construction or Repair.		Projected.		Required.		Total Length in Kilometres.
	Length in Kilometres.	Expenses of Annual Maintenance in 1,000 Lire.	Length in Kilometres.	Cost of Work in 1,000 Lire.	Length in Kilometres.	Proposed Cost in 1,000 Lire.	Length in Kilometres.	Assumed Cost in 1,000 Lire.	
Piedmont	3,783	2,516	137	8,166	501	11,122	1,428	—	5,849
Lombardy	2,972	1,780	33	999	311	2,502	147	—	3,463
Emilia	1,203	1,158	29	988	52	1,356	13	380	1,297
The Marches	363	124	2	47	10	157	—	—	375
Umbria	254	91	5	130	24	407	14	—	297
Tuscany	1,045	438	—	—	2	321	3	—	1,050
Naples	2,479	1,981	820	12,886	238	8,630	38	415	3,575
Sicily	530	845	115	1,698	167	4,485	140	200	952
	12,629	8,433	1,141	19,908	1,305	28,980	1,783	995	16,858

of Italy. Budgets for 1864, 1865, *and* 1866 (p. 210).

	Estimated Expenditure (in 1,000 lire).					
	1864.		1865.		1866.	
	Ordinary.	Extra-ordinary.	Ordinary.	Extra-ordinary.	Ordinary.	Extra-ordinary.
Ministry of Finance....	384,300	11,880	391,060	17,183	397,273	10,881
" Justice and Ecclesiastical Affairs	29,561	1,114	29,356	880	29,158	872
Ministry of Foreign Affairs	3,317	159	3,660	176	3,610	116
Ministry of Public Instruction	14,692	977	13,666	647	14,423	458
Ministry of the Interior	48,527	15,090	38,885	7,525	49,420	7,224
Ministry of Public Works	59,487	27,430	38,960	26,019	97,487	18,454
Ministry of War	191,613	42,922	185,055	35,393	175,667	16,739
" Marine	41,344	21,719	42,175	16,729	35,999	11,614
" Agriculture, Industry, and Commerce	3,412	2,816	4,532	1,977	3,175	1,616
	776,253 124,107	124,107 —	747,349 106,470	106,470 —	806,212 67,424	67,424 —
Deficit................	880,360 234,241 =£9,369,640	— — —	853,819 228,316 =£9,132,660	— — —	893,636 204,197 =£8,167,880	— — —

TABLE V.—*Italian Railroads in* 1863 (p. 211).

	In Operation.	In Construction.	Designed.	Total.
	Kilometres.	Kilometres.	Kilometres.	Kilometres.
Northern Net—				
In the kingdom	1,369	674	244	2,287
Beyond	470	63	—	533
Central Net—				
In the kingdom	958	822	80	1,860
Beyond	217	84	—	301
Southern Net	419	394	1,168	1,981
Island Net—				
Sicily	13	267	428	708
Sardinia	—	—	387	387
Total in the kingdom	2,759	2,157	2,307	7,223
" beyond	687	147	—	834
Total for Italy	3,446	2,304	2,307	8,057
= English miles	21,41	1,432	1,434	5,007

TABLE VI.—*State Railroads in* 1862 *Compared with* 1861 (p. 212).

	Fast Trains.	
	1862.	1861.
Total passengers	5,338,790	5,434,402
	Per cnt.	Per cnt.
First class	3·4	3·4
Second „	23·8	24·4
Third „	54·3	54·9
Military—		
First class	·1	·1
Second „	1·0	1·0
Third „	17·4	16·2
Total	100·	100·
Dogs	6,420	5,766
Merchandise, tons	49,944	52,136
Carriages	1,384	1,921
Horses and cattle	124,996	103,641

	Slow Trains.	
	1862.	1861.
Merchandise carried, tons	1,342,285	1,157,576
Horses and cattle	101,066	77,991
Carriages, including railway cars and locomotives	3,593	3,735

	Receipts.		Per Cent.	
	Lire.	Lire.	1862.	1861.
Fast—				
Passengers	10,066,790	10,576,544	47·8	49·6
Baggage	425,970	484,471	2·0	2·3
Merchandise	1,205,738	1,417,994	5·7	6·7
	11,698,498	12,479,009	—	—
Slow	9,314,031	8,843,923	44·5	41·4
Total	21,072,529 =£842,900	21,322,931 =£852,920	100·	100·

	Expenses in 1862.
	Lire.
General administration	168,571
Maintenance of way and stations	2,332,425
Office transport	2,129,893
Locomotive	3,261,763
Maintenance of movement material	1,495,980
Other items	775,106
	10,163,738 =£406,550
Expenses per cent. of receipts	48·2

TABLE VII.—*Telegraphs of Italy, France, Switzerland, and Belgium Compared* (p. 212).

	Italy.		France.	Switzerland.	Belgium.
	1863.	1862.	1862.	1862.	1861.
1. Surface in square kilometres	252,134	252,134	518,400	38,230	29,435
2. Population	22,000,000	22,000,000	37,400,000	2,500,000	4,670,000
3. Length of lines, kilometres	13,032	11,995	28,671	5,827	1,728
4. Number of stations	459*	401	508	177	170
5. Square kilometres of surface for each kilometre of length	19	21·	18·1	6·58	17·
6. Ditto for each station	550	628	10,204	216	173
7. Kilometres of length for each station	28	30	56	33	10
8. Number of inhabitants for each station	47,930	54,860	73,622†	14,181	27,400

* Besides 587 railway telegraph offices.

† Including the railway telegraphs, would reduce this number to less than half.

TABLE VIII.—*Societies for Mutual Aid* (*Friendly Societies*), 1862 (p. 213).

	Per 1,000 Inhabitants.		Number of Female Members to 100 Male Members.	Members Relieved to each 100 Free Members.	Days of Sickness to each Member Sick.
	Number of Societies.	Number of Members.			
Piedmont and Liguria................	4·95	1,043	6·87	47·3	14·7
Lombardy..................................	2·71	769	5·02	23·2	18·6
Parma and Piacenza	1·69	489	10·85	14·4	38·1
Modena, Massa, and Reggio	3·80	616	10·74	6·7	29·7
Romagna	3·27	986	6·80	15·5	29·6
The Marches..............................	2·15	709	12·75	4·2	27·3
Umbria......................................	2·73	576	7·58	19·5	19·4
Tuscany......................................	3·01	920	23·63	26·9	11·9
The Neapolitan provinces	·28	81	·36	1·8	4·1
Sicily..	·33	72	—	—	—
Sardinia......................................	·68	178	7·06	25·1	19·3
	2·08	512	9·14	29·6	16·4

Table IX.—*Friendly Societies. Rates of Mortality and Sickness in Fifty-eight Societies in* 1862 (p. 213).

Age.	Proportion of Members Living.	Number of Members, 31st Dec., 1861.	Admitted.	Left.	Died.	Number of Members, 31st Dec., 1862.	Members Relieved.	Days of Sickness.	For every 100 Free Members.		Mean Duration of Sickness of Members Sick.
									Relieved.	Days of Sickness.	
0—15	5	52	7	16	1	12	5	87	11	187	17
16—20	47	373	144	80	1	436	28	461	7	112	16
21—30	236	1,990	663	471	13	3,169	357	6,386	17	306	18
31—40	351	3,101	806	645	29	3,233	573	10,465	18	324	18
41—50	254	2,259	429	320	27	2,341	444	9,848	19	421	22
51—60	86	770	99	59	18	792	159	4,339	20	540	27
61—70	17	174	2	5	5	166	51	2,140	32	1,280	40
Over 70	4	36	1	—	3	34	10	778	29	2,283	77
	1,000	8,755	6,596	1,596	97	9,218	1,627	34,304	18	378	21

Table X.—*Commercial, Industrial, and Credit Companies,* 1865 (p. 215).

Companies.	Number of Companies.				Capital of Companies (in 1,000 Lire).			
	Ceased.	Winding up.	Existing.	Total.	Ceased.	Winding up.	Existing.	Total Capital.
Assurance—								
National	36	3	80	139	32,216	5,498	85,014	122,728
Foreign	6	—	14		—	—	= £3,400,560	—
Railways—								
National	6	—	27	37	123,192	—	1,269,216	1,392,408
Foreign	1	—	3		—	—	= £50,768,640	—
Credit—								
National	13	3	26	43	90,874	546	348,514	439,933
Foreign	—	—	1		—	—	= £13,940,560	—
Industrial—								
National	124	3	220	351	105,750	1,719	514,105	621,574
Foreign	—	—	4		—	—	= £20,564,200	—
	186	9	375	570	352,032	7,763	2,216,848 = £88,673,920	2,576,643

TABLE XI.—*Commerce of Italy. Total Value of Imports and Exports in 1858, or nearest Date of Returns previous to the Union* (p. 219).

	Imports in 1,000 Lire.	Exports in 1,000 Lire.
Ancient provinces	260,823	175,850
Lombardy	85,995	126,449
Naples	78,332	86,116
Sicily	26,227	59,211
Tuscany	79,195	44,544
Parma	18,000	14,500
Modena	25,667	18,605
Umbria, The Marches, Romagna	33,299	44,659
Total new kingdom	607,538	569,934
Patrimony of St. Peter	38,575	18,469
Venice	90,118	59,847
Trieste, Istria, Gorizia	36,553	21,717
Italian Tyrol	27,467	10,753
Total	800,251	680,720
Totals new kingdom	£24,301,520	£22,797,360
" Rome, Venice, &c.	7,708,520	4,431,440
Total	32,010,040	27,228,800

TABLE XII.—*Commerce of Italy. Imports and Exports in* 1861 (p. 219).

	Imports into Italy, in 1,000 Lire.	Exports from Italy, in 1,000 Lire.	Imports.	Exports.
			£	£
England	167,752	62,008	6,710,080	2,480,320
France	175,850	143,016	7,034,000	5,720,640
Austria	46,806	30,147	1,872,240	1,205,880
Switzerland	33,526	56,707	1,341,040	2,268,280
Netherlands	22,911	3,832	916,440	153,280
Belgium	14,032	2,109	561,280	84,360
Russia	15,050	20,365	602,000	814,600

Table XIII.—*Commerce of Great Britain with Italy. Trade and Navigation Accounts of the United Kingdom, for the Year ending* 31*st December*, 1865 (p. 223).

	1863.	1864.	1865.
Italy—	£	£	£
Sardinia (including the island)	2,114,380	1,910,111	1,529,138
Tuscany	1,073,669	951,153	1,130,762
Naples..	1,626,855	1,584,467	1,475,615
Sicily	684,418	870,178	868,440
Adriatic ports of Ancona in the Romagna..................................	403,790	281,587	372,931
	5,901,112	5,597,496	5,376,886
Papal ports on the Mediterranean	26,868	72,589	12,708
Austrian territories	137,193	139,506	151,536
Venetia, Illyria, Croatia, and Dalmatia..................................	864,736	792,119	725,789
The Countries to which Greater Values were Exported, than to Italy in 1865, *were*—			
France	8,673,309	8,187,361	9,034,883
Holland	6,324,696	6,884,937	8,111,022
Hanse Towns..................................	10,896,092	13,418,826	15,091,373
Turkey, European and Asiatic.........	6,898,992	7,503,988	7,151,559
Egypt	4,406,295	6,051,680	5,985,087
United States..................................	15,344,392	16,708,505	21,235,790
Brazil	3,964,261	6,249,260	5,668,089
Total to foreign countries.........	95,723,072	108,734,635	117,639,540
Total to British possessions	146,602,342	160,449,053	165,862,402

Note.—See Table IX, declared value of British and Irish produce and manufactures exported from the United Kingdom to each foreign country and British possession.

On the FREQUENT AUTUMNAL PRESSURE *in the* MONEY MARKET, *and the* ACTION *of the* BANK *of* ENGLAND. *By* W. STANLEY JEVONS, M.A., *Cobden Professor of Political Economy in Owens' College, Manchester.*

[Read before the Statistical Society, 17th April, 1865.]

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I.—*Preliminary Remarks.*

AT the beginning of last October (1865), the commercial world of England was disturbed by a remarkable withdrawal of coin from the Bank of England, causing a great decrease of the loanable capital, and necessitating a corresponding rise in the terms of discount. The commercial editor of the "Times," writing on Saturday evening, 7th October, said—

"The Bank of England this morning made a further advance of
" 1 per cent. in their rate of discount, the charge being now 7 per
" cent. The rise during the week has therefore been 2½ per cent., a
" movement unprecedented in so short a space. * * *
" At no former period, except during panics or runs from political or
" commercial disasters, has it ever been found requisite to advance
" the rate of discount in the face of a prolonged favourable condition
" of the foreign exchanges. For four months there has almost unin-
" terruptedly been a favourable balance week by week in the operations
" of the bullion market, as regards exports and imports, and during
" that time the home community have absorbed not only the surplus
" thus left, but about 3,000,000*l.* from the Bank, in addition to an extra
" one or two millions in notes. As the amount of currency used for
" internal purposes rarely experiences any great or permanent fluctu-
" ation, the Bank directors were entitled to assume week by week,
" as the absorption became more remarkable, that a turn must be
" rapidly witnessed, and that the market would then be oversupplied
" with the amounts that had been so strangely removed from it.
" But there was a point below which, whatever might be their con-
" fidence as to the supply of money actually available in the country,

"they could not allow their reserve of notes to fall, and that point "having been reached ten days ago, the present measures commenced. "And here, again, nothing but abnormal results were witnessed. "With a rise of half per cent., the demand still increased, and an "additional movement of 1 per cent. seemed to have no restrictive "effect."

The commercial press were in considerable perplexity as to the cause of this demand for money. The "Times" of the morning of 7th October, had allowed that "the question is still unsolved as to "the causes that can have led to that excessive absorption of gold "and notes by the public to which, in the absence of any unfavourable condition of the foreign exchanges, the existing pressure is "solely due. In addition to the influences of active employment "and high wages, it is suggested that there has been a partial drain "for Ireland, but the last published returns showed that the coin "held by the banks in that country was only 168,000*l.* in excess of "the total at this time last year."

In "Traver's Circular" it was remarked that "a further half million "sterling has been taken from the Bank by the public during the "past week, yet no additional suggestions have been offered to "account for this singular drain. Not only must the amounts withdrawn in August and September, in connection with election and "harvest payments, have been returned long ago to their natural "channels, but the sums withdrawn for autumn pleasure traffic must "now also be finding their way back to the banks. The absorption, "therefore, becomes every day more inexplicable."

By other papers or their correspondents the absorption of money was attributed variously to the large American purchases on credit, to extensive speculations in cotton at Liverpool, to the sinking of capital in joint stock enterprises, or to the Fenian conspiracy.

The remarks of the "Economist," though written during the progress of the pressure, appear to be substantially correct. In the issue of 14th October, the editor said, "The present rise in the value "of money is owing to the simultaneous occurrence of three causes. "There is a sort of *tide* in the cash transactions of the country which "periodically empties and periodically fills the Bank till. At the close "of every quarter there is a strong outgoing current. The non-"banking classes then get their money. Salaries are paid, wages are "paid, small dividends are paid; each of these transactions is very "minute, but their aggregate mass is very large. * * * Little "people are paid in actual cash; they take so much from the Bank "till. * * * Speaking generally, the middle of each quarter is "marked by an incoming current towards the Bank, and the close "of every quarter by an outgoing current from the Bank."

The periodical quarterly outflow of money from the Bank was then, according to the "Economist," the chief cause of the pressure, aggravated, as it goes on to explain in this particular case, by two minor causes, the demand for coin for Ireland, and the creation of bills by large cotton speculations. A few weeks later the "Economist" pointed out an unusual increase of the export and import trade of the country, revealed by the Board of Trade returns, as the chief aggravating cause.

It was, however, a correspondent whose letter, signed G. F., was inserted in the "Economist" of 21st October, who most correctly, as I think, attributed the pressure to an *annual tide* in the movement of money.

"Why," he says, "was the pressure in *October*, 1847, in *October*, "1857, in *October* last year, in *October* this year, and more or less in "*October* every year? It is because there is an *annual tide* in the "cash transactions of this country, and I believe of all countries. "The currency generally, including bank notes of all our banks, gold "coin, and silver coin, expands from July to the end of October or "beginning of November; it contracts from the middle of November to the end of March, and is on the whole stationary in April, "May, and June. * * * Such is the annual tide, "masked to some extent by the action of the quarterly tides. " * * * I believe that observations in the direc"tion I have indicated would be found to confirm the law of annual "tides arising from agricultural as distinguished from manufacturing "causes; and to prove that they are a periodical source of disturb"ance in the money markets of the world, of greater force and im"portance than has hitherto been acknowledged."

In these able remarks I thoroughly concur, and I think it therefore a work of interest to direct the attention of the Society to such analyses of the periodical fluctuations as G. F. suggests. It is the more needful because G. F. is not aware of the great peculiarity of the October drain, and even the "Economist" is so far from being quite accurately informed concerning these fluctuations that it considers the most serious demand for coin to occur in December.*

What I have to point out is, that in the beginning of October there are several concurring tendencies towards a drain of currency which render this by far the most critical period of the whole year. In September, 1862, I pointed out this tendency to an autumnal disturbance in the money market. In a paper read before the British Association in 1862, I said:—

"Some, perhaps, would attribute the sudden changes in the rate "of discount, bankruptcies, and consols, to the occurrence of panics "during the months of October and November. It would be more

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* "Economist," 2nd December, 1865, vol. xxiii, p. 1453.

"correct, however, to say that there is a periodic tendency to commercial distress and difficulty during these months, of which all concerned should be aware. It is when great irregular fluctuations aggravate this distress, as in the years 1836, 1839, 1847, 1857, that disastrous breaches of commercial credit occur."

In two of the three suceeding years, namely 1863 and 1865, this autumnal pressure has been strikingly manifested, and these occurrences, considered in connection with the fact that since 1825 all the severest pressures have either commenced or culminated in the last quarter of the year, are sufficient *primâ facie* evidence of a dangerous tendency in these months worthy of the deliberate attention of commercial men.

I have lately found, however, that so long ago as December, 1857, this autumnal pressure was distinctly described by Mr. William Langton to the Manchester Statistical Society. After noticing the fluctuation caused by the payment of the dividends, he makes the following very able and true remarks :*—"This short and superficial wave is accompanied by another, not so easily detected (because sometimes absorbed in a larger movement), and more difficult to account for. It has an annual increment and collapse, and is doubtless connected with the action of the seasons upon trade. In the midst of other disturbances this wave may be traced in the magnitude of the operations of the third and fourth quarters, and the almost invariable lull in the second quarter of each year, the third quarter being generally marked by rapid increase in the demand for accommodation at the Bank. The culminating point of the movement, originating in the third quarter of the year, appears to be a moment favourable to the bursting of those periodical storms, in which the commercial difficulties of the country find their crisis."

Now, I have no hesitation in saying that the autumnal pressure of 1865, was little more than an unusually distinct exhibition of this curious tendency to a drain of currency and capital in the autumn, and especially in the month of October. I wish, therefore, to divide the remainder of my remarks among four points:—

1. To analyse somewhat closely the nature of this tendency as shown in average tables of the circulation and the Bank accounts.
2. To offer some suggestions as to its cause.
3. To examine how far, and from what unusual causes the pressure of 1865 exceeded the average autumnal pressure.
4. To consider whether the action of the Bank during these disturbances is faulty, and whether any legislative change could truly alleviate the evil.

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* Observations on a table showing the balance of account between the mercantile public and the Bank of England. Read December 30th, 1857.

II.—*On the Average Fluctuations of the Currency, and the Bank Accounts within the Year.*

The nature and extent of the autumnal pressure is first of all clearly seen in tables of the average fluctuations of the Bank accounts from week to week, which I prepared for the British Association in 1862, and which are printed and explained in the appendix. (See Table I.)

The fact which first strikes us in these tables is the great quarterly variation in all the principal elements of the Bank accounts, chiefly caused by the payment of the dividends. Coincident with this payment, we observe a sudden increase in the note circulation, and in the private deposits, a considerable decrease of private securities or bills, a slight decrease of the bullion, accompanied by a larger, but otherwise similar variation of the loanable capital.

The amounts of these variations are approximately as follows:—

	Mlns. £
Government deposits, decrease	4,26
Private securities, „	1,91
Bullion and coin, „	,62
Loanable capital, „	1,91
Notes in circulation, increase	1,40
Private deposits, „	1,55

It is easy to detect in the tables evidence of a monthly variation, due to the settling day at the commencement of the month.

The *annual tide* in the accounts, however, is far more interesting than these artificial quarterly and monthly variations. It is ascertained in a manner very imperfect, no doubt, but sufficient for our purposes, by first determining the average variations within the quarter, and then subtracting these variations from the general variations in Table I.

Thus Table III gives the variation within the year, of the five principal elements of the Bank accounts, after elimination of the quarterly disturbance. We observe that the note circulation is at a minimum in January and February; that it rises gradually to a maximum in the third quarter, and then rapidly decreases during November and December. The private securities and private deposits exhibit great and opposite changes during the third and fourth quarters; the securities rise to a remarkable maximum, and the deposits fall to a very low minimum in the first week of October.

The bullion and loanable capital undergo a curious double oscillation during the year, both rising to a maximum in the first quarter, and again at the beginning of the third quarter. I am at a loss to explain this double oscillation, but it does not directly bear upon our present subject. The important fact for us is, that both the bullion and capital undergo a continuous decrease from the beginning of the third quarter, to about the middle of the fourth.

We may sum up these variations so far as they regard our present purpose, by saying that the Bank experiences during the latter part of the year, especially in the beginning of October, an unusual demand for money. Both by the withdrawal of deposits, and the presentation of bills for discount, the public try to get what they can from the Bank.

These accounts do not, however, reveal the most singular fact concerning the autumnal pressure. The movements of coin undergo curious fluctuations throughout the year, and reach a most remarkable crisis in the month of October.

The volumes of the "Miscellaneous Statistics of the Board of "Trade" contain certain tables of the movement of coin in the Bank of England, which I have not seen noticed. From these tables I deduce the following remarkable statements :—

Average Amount (1855-62) *of Gold Coin sent to the Branches of the Bank of England during each Month of the Year.*

	£		£
January	293,000	July	174,000
February	50,000	August	219,000
March	82,000	September	209,000
April	119,000	October	463,000
May	166,000	November	263,000
June	140,000	December	214,000

It is seen, that far more gold is sent during October than during any other month, and more than twice as much as during either of the preceding harvest months.

Average Excess (1855-62) *of Payments of British Coin at the Bank of England over Receipts.*

	£
January (dividend)	163,000
February (excess of receipts)	307,000
March	111,000
April (dividend)	808,000
May	363,000
June (excess of receipts)	74,000
July (dividend)	763,000
August	529,000
September	704,000
October (dividend)	1,509,000
November	258,000
December	123,000

We find, as we should expect, that the payments of coin are far larger in the first month of each quarter than in either of the succeeding months—on an average about four times as large. But we cannot fail to be struck with the fact, that the excess of payments of coin over receipts is nearly twice as great in October as in any other month.

The result is very remarkable, too, when we take the aggregate excess of payments over receipts in each quarter, or *vice versâ*, as follows:—

		£	
First quarter,	January–March	33,000	Receipts
Second "	April–June	1,097,000	Payments
Third "	July–September	1,996,000	"
Fourth "	October–December	1,890,000	"

I may add, that these fluctuations do not appear to be due to any very great or all-extensive influence of the seasons upon trade. For on carefully examining Mr. Newmarch's well known statistics of bills created in the years 1830-53, I find no great difference between the four quarters of the year. The average aggregate amounts of bills of all sizes drawn are as follows:—

	£
First quarter	64,050,000
Second "	61,550,000
Third "	65,690,000
Fourth "	61,960,000

The variation is greatest in the large bills, but the extreme variation of the aggregate is only to the extent of about 6 per cent. It is curious that we meet here again the double oscillation shown in the bullion and reserve of loanable capital.

III.—*On the Cause of the Autumnal Pressure.*

It being now sufficiently obvious how extensive is the autumnal disturbance of the money market, and especially how singular is the periodical crisis in October, I come to the question, What is the cause of the disturbance? This cause must be sought in the influence of the seasons upon trade and industry, but the difficult point is—Why does the drain fall so peculiarly in the first few weeks of October?

It is not hard to see that there must be an excess of coin in circulation in the latter half of the year. In agriculture, in the building and out-door trades generally, and in pleasure-seeking and travelling, there is an excess of wages and payments dispersed in the summer, and especially in the three months, July, August and September. Large numbers of labourers and others must then receive wages in coin upon which they will have to maintain themselves partially or wholly until next spring.

As they are not a class of persons who make any appreciable use of banks, even of savings' banks, they must actually hold a certain amount of coin by them in a temporary hoard.

This view is supported by the fact that the variation is more important in the metallic circulation than in that of notes, of which few would in England be held by the working classes.

But then, why do we not find the drain most excessive during the months June, July, August, and September, when the industry is most active? Why does the drain fall with most intensity into October? I cannot give an explanation with any confidence, and would rather look for it from members of the Society better acquainted with the details of banking. But it seems to me likely that the drain first falls upon private firms and country banks, whose reserves in consequence run down. Advantage is then taken of the payment of the dividends in October to replenish the banking reserves of notes and coin. It is evident, in fact, from Table I, that in October the dividends are withdrawn rather than placed in deposit, as usual at the other dividend payments.

Thus it would seem that there is a tendency every autumn to use the Bank of England as a bank of support, and of last resort. While the newspapers are arguing in October that the harvest is done, and pleasure traffic over, and therefore the coin should be flowing back, the coin is really dispersed among the non-banking classes of the country, and the drain having previously fallen on the smaller banks is only just reaching the Bank of England. "What "is seen and what is not seen" should always be discriminated in these matters. We do not see the movements of coin until the drain suddenly falls upon the Bank in the first weeks of October with unexpected and alarming severity.

It is interesting to compare the variation of the Bank of England circulation with that of the country and joint stock banks, or with that of the Scotch and Irish note currencies. I have calculated the average variation from week to week of the English country note circulation for the series of years 1845-62, and have shown it in Table V.

It will be seen that there is an increase of circulation at the commencement of each quarter, but in April and October the increase is much greater and more lasting than in the other quarters. The currency falls to its lowest in August and the beginning of September, then rises rapidly to the highest point of the year in the end of October, whence it falls continuously to the end of the year. These variations do not agree well with Mr. Gilbart's "Laws of the "Currency," deduced from an observation of monthly returns for ten years.*

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* *Statistical Journal*, vol. xvii, p. 295 (December, 1854).

His description, however, of the changes in the Scotch currency is very accurate.* "In Scotland the lowest point of the circulation "is in March, and the highest in November. The advance, however, "between these two points is not uniform; for the highest of the "intervening months is May, after which there is a slight reaction; "but it increases again until November and falls off in December. "The reason of the great increase in May and November is, that "these are the seasons of making payments. The interest due on "mortgages is then settled, annuities are then paid, the country "people usually take the interest on their deposit receipts, and the "servants receive their wages. There are frequently large sums "transferred by way of mortgage."

The variation of the Irish note circulation does not exactly agree with Mr. Gilbart's remarks. The notes of 5*l.* and upwards vary like the English country issues. The smaller note circulation falls to a low point in July and August, then rises rapidly until November, owing to the purchase of harvest produce. It remains high until March, when it begins to fall gradually till July.

A complete explanation of all these variations, pointing out how much is due to each particular cause, could only be founded on a wide basis of statistics, which do not exist. Much might, indeed, be done by minute inquiries into the customary payments at different times of the year, and in different parts of the country; but such an inquiry I am not at present able to undertake. I must content myself with pointing out the precise character and amount of the fluctuations in order that we may rightly appreciate the degree of disturbance they will usually occasion in the money market.

To sum up, then, the October drain is due, like many economical disturbances, to a concurrence of causes. The dispersion of money in wages during the summer, and the absorption of money and capital in buying up the produce of the harvest, occasion a general autumnal drain upon the resources of the banks, causing the private deposits, the bullion, and the reserve of notes to fall. Then the general quarterly payments of rent, bills, and especially the dividends at the beginning of October, cause a sudden extra run upon the resources of the Bank, quite sufficient in certain states of the money market to engender a panic, unless its normal and temporary nature be well understood.

IV.—*Special Examination of the Pressure of* 1865.

I now proceed to compare the drain of bullion in the autumn of 1865, with that normal drain shown in the average tables of the Bank accounts. The following statement gives the comparison in detail:—

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* *Statistical Journal*, vol. xvii, pp. 297, 298 (December, 1854).

Date.	Notes in Circulation.		Bullion in Issue Department.		Reserve of Loanable Capital (Notes).	
	Average of 1845-61.	1865.	Average of 1845-61.	1865.	Average of 1845-61.	1865.
June 7	19,88	21,16	14,35	14,89	8,65	8,38
„ 14	19,63	20,73	14,58	15,09	9,12	9.01
„ 21	19,52	20,71	14,80	15,35	9,45	9,29
„ 28	19,81	21,12	14,99	15,42	9,35	8,95
July 5	20,20	22,22	14,85	15,12	8,82	7,55
„ 12	20,82	22,89	14,67	14,56	8,02	6,82
„ 19	21,00	22,24	14,55	14,15	7,72	6,56
„ 26	20,80	22,07	14,49	13,60	7,85	6,18
Aug. 2	20,81	22,64	14,37	13,60	7,73	5,61
„ 9	20,57	22,03	14,33	13,35	7,93	5,97
„ 16	20,46	21,97	14,38	13,24	8,09	5,92
„ 23	20,24	21,78	14,35	13,27	8,29	6,14
„ 30	20,19	21,60	14,35	13,57	8,34	6,62
Sept. 6	20,10	21,70	14,29	13,42	8,36	6,37
„ 13	19,77	21,39	14,33	13,30	8,73	6,56
„ 20	19,70	21,32	14,36	13,34	8,83	6,67
„ 27	19,86	21,50	14,33	13,13	8,64	6,28
Oct. 4	20,41	22,73	14,14	12,44	7,90	4,36
„ 11	20,47	22,32	13,91	11,96	7,61	4,29
„ 18	21,06	22,31	13,69	12,00	6,81	4,34
„ 25	20,90	21,82	13,60	12,41	6,88	5,24
Nov. 1	20,97	21,85	13,57	12,51	6,78	5,31
„ 8	20,64	21,47	13,55	12,57	7,08	5,75
„ 15	20,31	21,15	13,55	12,86	7,41	6,86
„ 22	20,04	20,58	13,68	13,67	7,81	7,74
„ 29	19,89	20,72	13,82	13,84	8,11	7,77

The fairest mode of bringing the matter into a narrower compass will be to take the extreme highest and lowest points.

Average of Years, 1845-61.	Millions.	1865.	Millions.
Notes in Circulation—	£		£
September 20	19,70	September 20	21,32
October 18	21,06	October 4	22,73
Difference	1,36	Difference	1,41
Bullion—			
June 28	14,99	June 28	15,42
November 8	13,55	October 11	11,96
Difference	1,44	Difference	3,46
Reserve of Notes—			
June 21	9,45	June 21	9,29
November 1	6,78	October 11	4,29
Difference	2,67	Difference	5,00

If we restrict our view more particularly to the October drain, by comparing the extreme points of September and October, the change of the circulation remains as already shown, and the drain of gold and capital is as under:—

Average of Years, 1845-61.	Millions.	1865.	Millions.
Bullion—	£		£
September 20	14,36	September 6	13,42
October 25	13,60	October 11	11,96
Difference	,76	Difference	1,46
Reserve of Notes—			
September 20................	8,83	September 20	6,67
October 11	7,61	October 11	4,29
Difference	1,22	Difference	2,38

However we view it, the drain of 1865 was considerably beyond and in fact about double what is shown as the normal change in my average tables.

This excess may arise either from (1) exceptional circumstances affecting the trade of 1865, or (2) the general and gradual development of our industry.

I shall not delay much over the special disturbing circumstances of 1865. Many of them were mentioned in the beginning of the paper. The considerable degree of pressure in the money market, which has existed during the winter, shows, however, that excessive investments in joint stock and other enterprises have diminished the ready capital of the country, in spite of the late unusual abundance and cheapness of corn. It is known, too, that during last year, and one or two previous years, buildings of all sorts have been erected in great numbers in most of our towns. Great sums of money must have been dispersed in wages during the progress of these works, and especially during the summer.

Secondly, the ordinary export trade of the country expanded very rapidly during the year, as noticed by the "Economist." Not only do these exports represent so much money dispersed in wages over the country, but being sold to a great extent on credit, they cause a temporary abstraction of the capital of the country.

What I have chiefly to remark, however, is, that with the rapid growth of our system of trade and industry, our money market is necessarily becoming more and more delicate. We must look this fact boldly in the face. We must not needlessly complain of what is to a great extent an inevitable result of our progress, nor on the other hand must we omit any efforts to apply a remedy so far as this is possible.

The following figures will aid in showing what I mean:—

	Bullion in the Bank, September.	Notes in Circulation.	Total Exports of Year.	Computed Real Value of Total Imports of Year.
	Mlns. £	Mlns. £	Mlns. £	Mlns. £
1844	14,35	20,17	59,00	—
'54	12,63	19,62	116,00	152,00
'64	12,22	21,36	213,00	275,00

Whether we consider these numbers, or whether we look to the increasing perfection of our system of credit, clearing, and banking generally, which, as shown by Sir John Lubbock, enables coin to be almost dispensed with in large transactions, we see that we are carrying on a vaster and vaster system of trade upon a nearly stationary reserve of currency. Our trade goes upon a method resembling that of barter, except that the values exchanged or written off against each other are all determined and expressed in gold. Now it is the aggregate of coin and gold in circulation or reserve, in short the supply of gold as compared with the work it has to do, which determines the range of prices, and which must in the last resort be used to make the payments either in an internal or foreign drain.

Admirably has M. Laveleye said, in a passage of the "Revue des "Deux Mondes," quoted by the "Economist," in its "Annual "Review of 1864:"—

"All countries which carry on gigantic transactions with small "reserves of gold and silver, and which have a vast movement of "importations and exportations, must be exposed to these economical "perturbations. * * * * The more a country "expels the precious metals from the channels of circulation, and "replaces them by instruments of credit, bank notes, cheques, "warrants, deposits, clearing-houses, &c., and the more at the same "time it develops its relations with foreign countries, the more it "will be exposed to the periodical return of financial perturbations, "because more easily an unfavourable balance of trade and payments "will disturb all the mechanism of exchanges, and will require from "the managers of credit institutions redoubled circumspection, prudence, and ability."

Now this is just as true of internal as of foreign drains of gold. The larger our system of trade is, the larger the excess of wages dispersed at some periods of the year. When our reserve of coin is stationary, the greater apparently the inconvenience and alarm excited.

Even without taking into account exceptional circumstances, the unbounded prosperity of the last few years seems sufficient to explain why the autumnal drain has of late manifested itself with far more than the normal severity of the years 1845-61.

We must bear in mind that we are moving onwards, and rapid progress such as ours, however desirable in itself, must beget some difficulties.

V.—*On the Action of the Bank of England.*

We come now to the last question, whether the action of the Bank of England as at present constituted is beneficial to trade during these frequently recurring pressures.

It is well known that many merchants and gentlemen of influence in Glasgow, Liverpool, and elsewhere, have a strong desire to unsettle our monetary system again. They spare no pains in urging upon us that the Bank of England is the cause of all our troubles, and while some go so far as to propose an inconvertible currency, the others advise a return to a free issue of notes, the convertibility of which hall be dependent on the credit and discretion of the issuing banks, according to the system which used to prevail in Scotland, for instance.

It is the latter scheme alone that I need consider here.

I will not deny that there is some at least apparent harshness in the action of the Bank during the temporary fluctuations which I have attempted to describe. But after considerable reflection I have satisfied myself that this harshness is not necessarily inflicted under the conditions of the Bank Act, or rather I should say that what harshness is a necessary consequence of that Act is legitimate and ultimately beneficial to trade.

As regards a foreign drain of bullion, I may first remark, Lord Overstone and the supporters of the Bank Act seem to me to be in an impregnable position. Nothing can be more desirable, nothing more in accordance with the natural laws of economy and trade, than that a foreign drain should at once cause a reduction in the currency, and thus tend to restore the exchanges to equilibrium as quickly as possible. In a system of unrestricted issues the drain will for a time probably act upon the bankers' metallic reserves without leading them at once to reduce their advances of notes. The revulsion thus deferred only becomes ultimately more severe and hazardous.

It is, however, an internal drain which we have now to consider, and in this the *primâ facie* inconvenience of a restricted paper currency is manifested. Mr. Guthrie, the able advocate of the Scotch system, in his "Practical Contrast of English Banking and "British Free Banking," puts this clearly enough.

In our present system, he says:—

"The natural demand at rent-terms and other seasons for "increased circulation, has the same deranging and distressing effect "upon the money market as an export of bullion, and the people of "England are excluded from a privilege which the people of Scot-"land have found to be both safe and most profitable and con-"venient."

In contrast to this, he adds:—

"The circulation has increased in Scotland at certain seasons, to "the amount of 10 or 15 per cent., but this natural periodical "demand was met by the elasticity of the Scotch 1*l.* note circulation "without the slightest difficulty or disturbance of the money market, "and a similar circulation, with its corresponding advantages, should "of course be allowed to England."

These remarks are perfectly applicable to the autumnal pressures we have been considering. Had we an unrestricted note circulation, the three millions and a half of additional currency required might have been furnished by a proper number of bits of paper. Bankers and the Bank of England would readily have issued these notes in discount or payments of deposits and dividends. No one, perhaps, would have known until the proper blue book appeared long afterwards, how great an excess was issued, and the money market might have proceeded without apparent disturbance.

The question here becomes twofold:—

1. How far is such an absence of apparent disturbance desirable?
2. How far may it be attained under the present system?

The answers I take it, are as follows:—

1. So far as a demand is a purely temporary demand for internal circulation, it is desirable that it should be furnished by an extended issue of notes or gold from the Bank reserves. This excess of currency will naturally return of itself as the seasons go round.

2. So far as a demand for gold or notes is known to be of this temporary character, it may even now be properly supplied by the Bank of England and other banks without exciting pressure on the money market.

On the other hand, so far as a drain is not certainly known to be of a temporary and periodic nature, bankers are bound to raise the terms of advances and restrict their amounts. Under the same circumstances bankers would be bound in prudence to reduce their issues, even did the Bank Act not exist. I hold, in short, that *the Bank of England and bankers generally have just the same legitimate latitude in increasing or diminishing their advances now as they would have under an unrestricted system.* It is only the illegitimate expansion of the note currency which is put out of their power.

If it be clearly known that in the first weeks of October there is a normal demand for currency far greater than at any other time of the year, then I take it to be an expedient and necessary policy of the Bank to prepare themselves for it somewhat beforehand, and when it does occur, to let their reserve run down lower than they would at any other time of the year, knowing that the excess of currency issued will in the natural course of things return.

This is the policy to a considerable extent adopted even at present. The "Times" represents the Bank directors as feeling confidence that the amounts of currency gradually withdrawn during July, August, and September would shortly return. But their confidence failed when the sudden October pressure fell upon the Bank. Here was, I apprehend, a double error to some extent. The newspaper press and the mercantile world were not sufficiently aware that the chief pressure falls into October. Had this been thoroughly known it would have been only prudent for the Bank directors to strengthen their position somewhat earlier than they did. When the expected run in the beginning of October came upon them it would have been quite unnecessary to put on so violent a pressure as a rise of 2½ per cent. in the rate of discount in ten days.

It cannot be denied, indeed, that to some extent the periodic drain was aggravated by a more chronic scarcity of capital which has been felt ever since. Still I have no hesitation in asserting that if the public and the commercial press had been thoroughly aware how peculiar those first few weeks of October naturally are, far less alarm, pressure, revulsion of prices and injury would have been excited last autumn.

I take it, therefore, that a careful observation and comparison of the fluctuations of the money market is sufficient to enable us to avoid the inconveniences of these periodic pressures. We should learn to discriminate what is usual and normal in the changes of the Bank accounts, from what is irregular or abnormal. It is a matter of skill and discretion to *allow for the normal changes.* It is the abnormal changes which are alone threatening or worthy of very much attention. These changes arise from deficient or excessive harvests, from sudden changes of supply or demand in any of our great staple articles, from periods of excessive investment or speculation, from wars and political disturbances, or other fortuitous occurrences which we cannot calculate upon and allow for. In such matters of high uncertainty it is desirable to trust as little to discretion and commit as much to the operation of natural laws as possible. The Bank Act carries out this principle, and relieves the directors from a vast responsibility by making the circulation identical in amount and variations with a purely metallic currency. I must maintain that under the present system the English currency is governed by the natural laws of supply and demand of a metallic currency, and not by merely artificial regulations. If the terms are understood aright, we have already a natural and free trade system of currency. And I venture to take this auspicious expression, Free Trade, from those who use it wrongly and confuse the free manufacture of currency with free trade in capital, the true business of the banker.

APPENDIX.

Description of the TABLES I, II, *and* III.

Table I was formed by arranging the Bank accounts of the years 1845-61 under each other, so that the average state of the accounts for the first week, for the second week, and so on, could be drawn.

Table II was formed from Table I, by arranging the accounts of the corresponding weeks of each quarter under each other, and drawing the average of the first week of the quarter, the second week, and so on.

Table III represents the divergence of each of the principal elements of the Bank account from its average point, after elimination of the quarterly variation. It was formed by subtracting the numbers in Table II from the corresponding numbers of each quarter in Table I. Thus—

£
20,200,000 = average note circulation of 27th week.
20,110,000 = „ „ 1st week of quarter.

Difference 90,000 = divergence of note circulation.

The numbers in Table III are only approximative, and in the forty-first week are thrown wrong by the dividend day falling five days later than usual.

Tables IV, V, and VI sufficiently explain themselves.

N.B.—All the tables were calculated to a further place of figures, and thus an apparant discrepancy of an unit will sometimes be met in the last place of figures given.

In cutting off useless columns of figures an unit has always been added to the last place retained when *the highest figure cut off was 5 or more.* Thus, instead of 10,665 I should write 10,67, according to a rule approved by Professor De Morgan.

TABLE I.—*Average State of the Accounts of the Bank of England in each Week.* (*Average of* 1845-61.)

[0,000's omitted.]

Weeks.	Average Distribution of Months.	Circulation.			Bullion and Coin. Gold and Silver.			Reserve of Notes.	Total Reserve, Notes and Coin.	Private Securities.	Private Deposits.
		Notes.	Bills.	Total.	Issue Department.	Banking Department.	Total.				
1	Jan. 4	19,74	98	20,72	14,16	64	14,80	8,59	9,22	16,75	10,81
2	" 11	20,32	1,02	21,34	13,98	63	14,60	7,83	8,45	15,31	12,71
3	" 18	20,51	1,03	21,54	13,94	65	14,59	7,60	8,25	14,83	12,43
4	" 25	20,36	1,01	21,36	13,98	67	14,64	7,79	8,46	14,85	12,39
5	Feb. 1	20,42	99	21,41	13,99	68	14,68	7,75	8,43	15,14	12,33
6	" 8	20,01	99	21,00	14,03	70	14,73	8,18	8,88	15,13	12,09
7	" 15	19,84	96	20,80	14,18	71	14,88	8,51	9,22	15,16	11,91
8	" 22	19,60	93	20,53	14,27	73	15,00	8,84	9,57	15,16	11,89
9	Mar. 1	19,75	93	20,67	14,31	72	15,03	8,74	9,45	15,74	11,91
10	" 8	19,55	93	20,49	14,36	71	15,07	8,97	9,68	15,67	11,67
11	" 15	19,37	91	20,28	14,41	72	15,13	9,20	9,93	15,83	11,68
12	" 22	19,27	91	20,18	14,51	73	15,24	9,42	10,14	15,96	11,57
13	" 29	19,72	92	20,64	14,48	72	15,20	8,93	9,65	16,55	11,46
14	Apl. 5	20,10	95	21,06	14,22	69	14,91	8,29	8,97	16,61	11,64
15	" 12	20,70	99	21,68	14,03	66	14,69	7,50	8,17	15,20	13,26
16	" 19	20,74	99	21,73	13,92	64	14,56	7,35	7,99	14,74	12,91
17	" 26	20,64	99	21,63	13,87	68	14,55	7,40	8,08	14,46	12,45
18	May 3	20,70	1,00	21,70	13,73	68	14,41	7,20	7,88	14,55	12,07
19	" 10	20,47	1,00	21,47	13,78	69	14,48	7,49	8,18	14,59	11,89
20	" 17	20,16	97	21,13	13,81	71	14,52	7,82	8,53	14,77	11,69
21	" 24	19,92	95	20,86	14,03	73	14,75	8,28	9,01	14,59	11,47
22	" 31	19,94	94	20,88	14,24	72	14,96	8,47	9,19	14,65	11,55
23	June 7	19,88	95	20,82	14,35	72	15,07	8,65	9,36	14,75	11,42
24	" 14	19,63	94	20,57	14,58	70	15,29	9,12	9,83	14,78	11,43
25	" 21	19,52	91	20,43	14,80	73	15,53	9,45	10,18	14,77	11,15
26	" 28	19,81	93	20,74	14,99	70	15,69	9,35	10,05	15,24	11,06
27	July 5	20,20	97	21,17	14,85	67	15,52	8,82	9,49	15,64	11,27
28	" 12	20,82	1,01	21,83	14,67	65	15,32	8,02	8,67	14,31	13,04
29	" 19	21,00	1,01	22,01	14,55	65	15,19	7,72	8,37	13,89	12,56
30	" 26	20,80	1,04	21,84	14,49	64	15,13	7,85	8,50	13,71	12,04
31	Aug. 2	20,81	1,02	21,83	14,37	64	15,00	7,73	8,37	14,00	11,73
32	" 9	20,57	1,02	21,59	14,33	64	14,97	7,93	8,57	14,19	11,28
33	" 16	20,46	1,03	21,49	14,38	65	15,02	8,09	8,73	14,36	10,96
34	" 23	20,24	1,03	21,26	14,35	65	15,01	8,29	8,94	14,22	10,58
35	" 30	20,19	1,01	21,19	14,35	64	15,00	8,34	8,98	14,55	10,51
36	Sept. 6	20,10	1,01	21,11	14,29	62	14,91	8,36	8,98	14,83	10,17
37	" 13	19,77	98	20,76	14,33	64	14,98	8,73	9,37	15,03	10,16
38	" 20	19,70	99	20,68	14,36	66	15,01	8,83	9,49	15,53	10,15
39	" 27	19,86	99	20,85	14,33	65	14,99	8,64	9,30	16,18	10,07
40	Oct. 4	20,41	1,03	21,44	14,14	60	14,74	7,90	8,50	16,89	10,15
41	" 11	20,47	1,03	21,50	13,91	62	14,53	7,61	8,23	16,63	10,58
42	" 18	21,06	1,07	22,12	13,69	59	14,28	6,81	7,39	15,40	11,53
43	" 25	20,90	1,06	21,96	13,60	61	14,21	6,88	7,48	15,22	11,47
44	Nov. 1	20,97	1,05	22,01	13,57	61	14,18	6,78	7,39	15,46	11,32
45	" 8	20,64	1,04	21,68	13,55	61	14,16	7,08	7,69	15,35	11,04
46	" 15	20,31	1,02	21,33	13,55	64	14,19	7,41	8,05	15,63	10,90
47	" 22	20,04	1,01	21,05	13,68	63	14,31	7,81	8,44	15,94	10,86
48	" 29	19,89	99	20,87	13,82	65	14,47	8,11	8,76	16,10	10,97
49	Dec. 5	19,75	98	20,74	13,90	67	14,57	8,32	8,98	16,10	10,88
50	" 12	19,44	95	20,39	14,06	68	14,75	8,79	9,47	16,08	10,83
51	" 19	19,24	94	20,19	14,20	68	14,89	9,13	9,82	16,28	10,80
52	" 26	19,35	91	20,26	14,23	66	14,88	9,05	9,71	16,71	10,79

TABLE II.—*Average Variation of the Bank Accounts from Week to Week of the Quarter.*

[0,000's omitted.]

Weeks.	Circulation.			Bullion and Coin. Gold and Silver.			Reserve, Notes and Coin.	Private Securities.	Deposits.	
	Notes.	Bills.	Total.	Issue Department.	Banking Department.	Total.			Public.	Private.
	£	£	£	£	£	£	£	£	£	£
1	20,11	98	21,10	14,34	65	14,99	9,05	16,47	7,89	10,96
2	20,58	1,01	21,59	14,15	64	14,79	8,38	15,36	5,02	12,40
3	20,83	1,02	21,85	14,02	63	14,66	8,00	14,71	3,94	12,36
4	20,68	1,02	21,70	13,98	65	14,63	8,13	14,56	4,01	12,09
5	20,72	1,02	21,74	13,91	65	14,57	8,02	14,79	4,27	11,86
6	20,42	1,01	21,44	13,92	66	14,58	8,33	14,82	4,68	11,58
7	20,19	1,00	21,19	13,98	68	14,65	8,63	14,98	5,38	11,36
8	19,95	98	20,92	14,08	69	14,77	8,99	14,98	5,94	11,20
9	19,94	96	20,90	14,18	68	14,86	9,09	15,26	6,28	11,24
10	19,82	97	20,79	14,23	68	14,90	9,25	15,34	6,65	11,03
11	19,55	95	20,50	14,35	69	15,03	9,65	15,43	7,18	11,03
12	19,43	94	20,37	14,47	70	15,17	9,91	15,64	7,78	10,92
13	19,69	94	20,62	14,51	68	15,19	9,68	16,17	8,20	10,85

TABLE III.—*Divergence of the Bank Accounts from their Average Condition, after elimination of the Quarterly Variation,* 1845-61.

[0'000s omitted.]

Weeks.	Notes in Circulation.	Total Bullion in Issue and Banking Departments.	Reserve of Notes and Coin in Banking Department.	Private Securities.	Private Deposits.	Weeks.	Notes in Circulation.	Total Bullion in Issue and Banking Departments.	Reserve of Notes and Coin in Banking Department.	Private Securities.	Private Deposits.
	£	£	£	£	£		£	£	£	£	£
1	−37	−19	+18	+28	−16	27	+ 9	+53	+44	− 83	+31
2	−26	−19	+ 7	− 5	+31	28	+24	+53	+29	−1,06	+64
3	−31	− 6	+25	+11	+ 7	29	+17	+54	+37	− 82	+20
4	−32	+ 1	+33	+29	+30	30	+13	+50	+37	− 85	− 5
5	−31	+11	+41	+36	+47	31	+ 9	+44	+35	− 79	−13
6	−41	+14	+55	+31	+52	32	+15	+39	+24	− 62	−29
7	−35	+23	+58	+18	+54	33	+27	+37	+10	− 62	−41
8	−35	+23	+58	+19	+69	34	+29	+24	− 5	− 76	−62
9	−20	+16	+36	+48	+67	35	+25	+13	−11	− 71	−72
10	−27	+16	+43	+33	+63	36	+28	+ 1	−28	− 51	−87
11	−18	+ 9	+28	+40	+66	37	+22	− 6	−28	− 40	−86
12	−16	+ 7	+24	+33	+66	38	+27	−16	−42	− 11	−77
13	+ 4	+ 1	− 2	+38	+62	39	+18	−20	−38	+ 1	−78
14	− 1	− 8	− 7	+14	+67	40	+30	−26	−55	+ 41	−82
15	+12	− 9	−22	−16	+86	41	*	*	*	*	*
16	− 9	− 9	− 1	+ 2	+55	42	+23	−38	−61	+ 68	−82
17	− 3	− 9	− 5	−10	+37	43	+22	−42	−65	+ 67	−62
18	− 3	−16	−14	−24	+21	44	+25	−38	−63	+ 67	−54
19	+ 4	−11	−15	−23	+31	45	+22	−43	−65	+ 54	−54
20	− 3	−14	−10	−21	+33	46	+12	−47	−58	+ 65	−47
21	− 3	− 2	+ 2	−39	+27	47	+ 9	−46	−55	+ 96	−34
22	0	+10	+ 9	−61	+32	48	− 6	−39	−34	+ 84	−26
23	+ 5	+17	+11	−59	+39	49	− 7	−34	−27	+ 77	−15
24	+ 8	+25	+18	−65	+40	50	−11	−29	−18	+ 65	−20
25	+ 9	+37	+28	−87	+23	51	−19	−28	− 9	+ 65	−12
26	+12	+50	+37	−93	+22	52	−34	−31	+ 3	+ 54	− 5

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* The October dividends being due five days later than the other dividends, the results for the forty-first week are thrown out, and cannot be given.

TABLE IV.—*Average Amount of the Chief Elements of the Bank Accounts during the Whole Period*, 1845-61.

	£
Notes in the hands of the public	20,146,000
Seven day and other bills	984,000
Total circulation	21,130,000
Gold and Silver Bullion and Coin—	
Issue department	14,163,000
Banking "	667,000
Total	14,830,000
Reserve of notes and coin in banking department	8,854,000
Private securities	15,269,000
" deposits	11,451,000
Public "	5,940,000

TABLE V.—*Average Variation from Week to Week, of the Note Circulation of the English Private and Joint Stock Banks*, 1845-62.

[0,000's omitted.]

Weeks.	Average Circulation.	Weeks.	Average Circulation.	Weeks.	Average Circulation.	Weeks.	Average Circulation.
	£		£		£		£
1	6,53	14	6,86	27	6,51	40	6,85
2	6,75	15	6,97	28	6,58	41	6,98
3	6,81	16	6,97	29	6,53	42	7,06
4	6,74	17	6,94	30	6,45	43	6,99
5	6,64	18	6,92	31	6,37	44	6,91
6	6,59	19	6,90	32	6,35	45	6,85
7	6,55	20	6,87	33	6,33	46	6,79
8	6,50	21	6,75	34	6,30	47	6,69
9	6,47	22	6,62	35	6,31	48	6,61
10	6,51	23	6,56	36	6,35	49	6,52
11	6,54	24	6,52	37	6,42	50	6,49
12	6,58	25	6,48	38	6,50	51	6,41
13	6,71	26	6,48	39	6,63	52	6,41

TABLE VI.—*Average Variation during the Year of the Bank Note Circulation of Scotland and Ireland, at Four-weekly Intervals*, 1853-62.

[0,000's omitted.]

Four-weekly Returns.	Scotland.		Ireland.		Four-weekly Returns.	Scotland.		Ireland.	
	£5 and Upwards	Under £5.	£5 and Upwards	Under £5.		£5 and Upwards	Under £5.	£5 and Upwards	Under £5.
	£	£	£	£		£	£	£	£
1	1,47	2,63	3,05	3,57	8	1,42	2,55	3,01	2,82
2	1,44	2,50	3,08	3,60	9	1,39	2,54	2,92	2,82
3	1,38	2,41	3,06	3,50	10	1,41	2,61	2,99	3,01
4	1,35	2,41	3,09	3,39	11	1,52	2,67	3,24	3,41
5	1,44	2,46	3,22	3,26	12	1,62	2,83	3,26	3,54
6	1,66	2,75	3,17	3,09	13	1,60	2,83	3,15	3,55
7	1,51	2,59	3,03	2,93					

OBSERVATIONS *on* FRENCH POPULATION STATISTICS, *particularly those of* BIRTHS, DEATHS, *and* MARRIAGES. *By* T. A. WELTON, ESQ.

[Read before the Statistical Society, 16th January, 1866.]

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IT is highly important, when occupying ourselves with the statistics of any considerable population, that we make, in the first instance, a clear and large outline of the principal features of the subject, so that every matter of detail may readily find its appropriate place in our minds, and serve as a colouring to heighten the effect of the great picture we have thus mentally placed before us, and to give it, in a manner, reality and life.

Without some such plan, the aggregation of details overwhelms without informing the mind; the colouring which, well distributed, would form an impressive picture, only serves to create a confused and meaningless daub.

I.—*Divisions.*

The divisions made use of in the following pages, are seventeen in number, or rather sixteen, besides the Island of Corsica, which naturally constitutes a little division by itself.

None of the continental divisions contain much less than a million of inhabitants, and their average population is about two millions.

In area, they are more unequal; but the remarkable peculiarities observable in Alsace, amply justify the constitution of that province into a separate division; and motives of expediency also dictated the creation of the divisions of the Alps and the Adour.

If Roussillon had not been so diminutive a country, it would have fully deserved a separate place. Under the circumstances, however, it has been thought best to annex it to the contiguous group of departments, comprising the vallies of the Upper Garonne and of its tributaries.

If the department of the Isere could have been subdivided, the valley of that river would have been allotted to the division of the Alps; and with it the city of Grenoble, which would have become the capital of that division.

Enumerated shortly, the divisions are *nine in the north*, viz.:—

Flanders, Picardy, &c.	in which are	Lille, Amiens, Laon.
Alsace	„	Strasbourg, Mulhausen.
Lorraine and Franche Comte	„	Metz, Epinal, Besançon.
Upper Seine	„	Dijon, Troyes, Rheims.
Lower Seine	„	Paris, Havre, Rouen.
Western Normandy, with Maine, &c.	„	Caen, Alençon, Le Mans.
Western Brittany	„	Brest, Lorient, Rennes.
Lower Loire	„	Nantes, Angers, Poitiers.
Middle Loire	„	Tours, Orleans, Bourges.

And *seven in the south*, viz.:—

Mediterranean Coast	in which are	Marseilles, Montpellier, Avignon.
Alps	„	Valence, Digne, Gap.
Lower Saone	„	Lyons, Grenoble, Maçon.
Auvergne, Limosin, &c.	„	Clermont, Limoges.
Lower Garonne	„	Bordeaux, Perigueux, Angouleme.
Upper Garonne and Roussillon	„	Toulouse, Perpignan.
Adour	„	Bayonne, Tarbes.

And the table numbered XII in Appendix exhibits their actual populations and some statistics of births, deaths and marriages.*

II.—*Crops Raised in the Several Divisions.*

In a country so large as France, and where the climate and soil vary from the moist plains of Flanders to the arid heaths of Brittany and the slopes of the Alps and Pyrenees, a corresponding variety in the productions raised may be reasonably looked for. And indeed, where the manufacturing, mining, and urban elements are not prominent enough to furnish, as in England, the leading principles, by which any large grouping of districts must be governed, hardly any course can be more natural than to look to agriculture, the remaining great interest, for those distinctions, at once important and local, upon which every such classification must be based.

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* The statistics throughout this paper are principally derived from two official works, viz.:—

1. "Statistique de la France. Deuxième série, tome viii. Statistique "Agricole," published in 1860. The values of produce are for the year 1852, but the estimated produce "in an ordinary year" is also stated. This work is very elaborate.

2. "Statistique de la France. Mouvement de la Population, pendant les Années "1855, 1856, et 1857. Deuxième série, tome x," published in 1861.

The production of wheat and oats is so general throughout France, that it is the exception when these kinds of grain fall below one-third in value of the total produce. This happens in Alsace, where the potato assumes greater importance than elsewhere in France; in Auvergne, where, as well as in Brittany, rye forms an enormous portion of the crop, and in the Adour valley, where maize, to a great extent, takes the place of other corn.

Wine is produced, to some extent, in every one of the divisions; but its production is insignificant in Brittany, Normandy, and Flanders.* In the north, it is most largely produced in the division of the Upper Seine (Champagne) and in that of the Middle Loire.

In the south of France there are two divisions in which wine constitutes about one-fourth in value of the whole crop, viz., that of the Lower Garonne (around Bordeaux) and that of the Mediterranean coast. In the latter, however, the produce of the vineyards does not bear a very high reputation. In Auvergne and in the Alpine division wine forms, on the other hand, a comparatively unimportant fraction of the total produce, amounting in Auvergne to little more than one-twentieth of the entire crop.

As might be expected, artificial meadows are more common near Paris than elsewhere in France; the growth of roots and beans is also a feature most largely developed in the northern provinces. In French Flanders the multiplicity of the objects of culture is very striking. Olives and mulberries do not anywhere constitute a valuable portion of the crop, except in the south-eastern divisions of the Alps, the Mediterranean coast and Corsica.

The extensive pasturages of the mountainous Auvergne, and the comparative scantiness of those of the Mediterranean coast, and some of the northern divisions, constitute the last features which appear deserving of notice, in this very slight survey of the agricultural productions of the French territory. Two Tables (Nos. I and II) at the end of this paper will furnish the more precise ratios, upon which it is founded. From these, the following general statements are extracted:—

In the north of France, although the climate is more congenial to the growth of grain, roots, and grasses, than that of the vine and olive, nevertheless the value of the crops is greater, *in comparison with the population*, than in the south; the ratios being respectively 168 and 140 frs. per head, excluding the products of domestic animals.

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* The southern part of department Aisne, in the Flemish division, is however to be excepted from this remark.

The comparative importance of the respective agricultural productions, in the north and in the south, may be stated thus:—

	North.	South.
Wheat and oats	46·4	34·2
Rye, meteil, and buckwheat	9·8	11·6
Barley	4·0	1·4
Artificial meadows	7·6	4·3
Potatoes	3·5	3·7
Roots, beans, &c.	12·5	6·2
Pasturages	10·4	15·3
	94·2	76·7
Maize	·1	3·9
Wine	5·0	15·6
Olives, mulberries, &c.	·7	3·8
	100·0	100·0

III.—*Education.*

The state of education in France does not present so near an approach to uniformity in the various provinces as is observable in our own country. Indeed, scarcely anything can be more striking than the contrast between the comparatively instructed populations of the old German provinces, and the wofully uninstructed ones in the centre, south and west. In passing from Strasbourg through Troyes to Orleans and Nantes, the divisions traversed give the following results:—

	Married, who could not Sign (1856).	
	Males.	Females.
	Per cent.	Per cent.
Alsace	2·5	5·9
Lorraine, &c.	5·4	18·2
Upper Seine	14·3	22·8
Middle Loire	49·0	61·8
Lower Loire	46·4	66·0

And proceeding a little farther, in nearly the same direction, we arrive at Western Brittany, where the proportions of those who could not sign their names were 57·1 males, and 68·0 females, out of every hundred married.

Western Brittany is the division where the *males* are worst instructed. But there is a lower depth yet for the females. In the *south-west* corner of France lie the divisions—

	Married, who could not Sign (1856).	
	Males.	Females.
	Per cnt.	Per cnt.
Lower Garonne	42·7	68·0
Adour	35·3	72·4
Upper Garonne, &c.	38·8	69·7

In which the proportional number of illiterate women is as great or greater than in Brittany.

In the Island of Corsica, as many as 82 women in the hundred were unable to sign their names.

In the large inland division of Auvergne, the degrees of ignorance (for both sexes) were about equal to those in Lower Loire.

In the *department* of the Seine (Paris), the proportions were 5·3 males, and 15·1 females unable to sign, but in *the rest of the division* of the Lower Seine, the figures were 18·8 males, and 27·4 females, making an average for the division of 12·6 males and 21·8 females in the hundred, unable to sign their names.*

It cannot be doubted that the state of education has an important influence on the physical condition of any population.

It will be interesting to notice to what extent the manners and the sanitary condition of the populations of the several French divisions appear to vary, so far as the scanty materials at hand will permit, bearing in mind, of course, the geographical peculiarities which always have so large an influence on such matters.

IV.—*Ages at Marriage.*

The age at marriage is given with a good deal of minuteness in the French returns. The following summary will however convey a sufficiently distinct idea of the ages at which the people marry, in the southern and northern divisions respectively :—

	Nine Northern Divisions.		Eight Southern Divisions.	
	Males.	Females.	Males.	Females.
Under 20	3,974	26,628	3,815	24,107
20–25	39,443	60,143	26,682	42,485
25–30	56,015	38,819	37,734	25,538
30–35	30,980	19,309	23,174	12,587
35–40	15,725	9,989	11,965	5,919
40 and upwards	20,992	12,241	13,902	6,641
Totals...........	167,129		117,272	

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* See Appendix, Table III, where the averages for France are shown to be 31·1 males and 47·0 females signing with marks, to every 100 marriages.

It will be seen that the women marry in greater proportional numbers, at the earlier ages, in the south than they do in the north. The following ratios will make this clear:—

	Nine Northern Divisions.		Eight Southern Divisions.	
	Males.	Females.	Males.	Females.
Under 25	26·0	51·9	26·0	56·8
25–30	33·5	23·2	32·2	21·8
30 and upwards	40·5	24·9	41·8	21·4
	100·0		100·0	

The divisions taken separately show the following peculiarities:*

Late marriages, among both sexes, are the rule in Alsace, Lorraine, and Brittany, and also in the valley of the Adour.

The males also marry late in the Alpine division and that of the Lower Saone, while the females marry late in Western Normandy and in the division of the Lower Loire. These may all be treated as divisions where late marriages among both sexes are *comparatively* numerous, the remainder being the divisions where late marriages (age above 30) form a proportion of the whole *not exceeding* 42·9 per cent. in the case of males, and 22·6 per cent. in that of females.

Early marriages, among both sexes, take place in the divisions of the Upper Seine, Middle Loire, Lower Garonne, and Mediterranean coast.

Early marriages among males are prevalent in Flanders and in the valley of the Lower Seine. On the other hand, females marry early in the division of the Upper Garonne, and in Corsica.

In the large interior division of Auvergne, the ages at marriage do not vary much from the average.

If Paris be taken separately, the division of the Lower Seine appears more peculiarly one of early marriages, so far as the provincials are concerned, the *Parisians* marrying late.

To show the extent of the variation in different divisions, the following figures may be useful:—

	To 100 Marriages.	
	Males under 25.	Females under 25.
Alsace	16·3	36·1
Lorraine	18·6	41·2
Western Normandy	24·4	48·1
Middle Loire	32·1	60·2
Lower Seine (excluding Paris)	36·1	64·3
Department Seine (or Paris)	17·9	49·5
Adour	18·5	47·3
Upper Garonne	27·7	59·7
Mediterranean coast	28·4	63·2
Lower Garonne	31·5	59·7

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* See Table IV, Appendix.

As the marriages of the two sexes appear in the great majority of instances either to be both early or both late in the same divisions, it may perhaps be thought a safe inference, that the tendency to moral restraint, or the reverse, is in some measure indicated by the proportions of ***early*** marriages. We shall not find, however, that the ***absolute number*** of marriages is larger in proportion to population, where *early* marriages are frequent, than in other quarters. At least, there is not such a decided coincidence in the two orders of facts as to serve for the basis of an argument.

V.—*Marriage-Rates.*

It might be found very interesting, could we compare the absolute numbers of marriages contracted by unmarried and widowed persons, at the several ages, with the total numbers of such persons at the like ages; but the absence of the latter class of information prevents such a comparison being drawn. In different parts of France, it is likely that the proportion of unmarried persons to the population varies considerably; but we have no alternative at present, except to compare the total marriages with the total population.

Proceeding in this manner, we find[*] that marriages are generally most numerous in Paris, and in the division of the Lower Saone, where they are late, and in Upper Seine, Middle Loire, Lower Garonne, and Mediterranean coast, where they are early. These divisions include, besides the capital, the cities of Lyons, Bordeaux, and Marseilles, and the figures thus point to a numerical augmentation of marriages in *large towns*, no matter whether the practice in them be to marry early or late.

On the other hand, marriages are fewest in the late-marrying divisions of the Adour, Brittany, Western Normandy, and Alsace.

VI.—*Civil Condition.*

The civil condition of the French population, resulting from the operation of natural causes, combined with the more or less early, and numerous, marriages which take place among them, may be summed up as follows,[†] disregarding the numbers of the widowed as not of material importance for our present purpose.

The proportion of unmarried males is higher at the ages 20—40, and lower after 60, in France than in England. But the female population of France presents a larger proportional number of married persons, at all ages, than that of England.

The ages at marriage in England cannot be given with the same precision as the civil condition of the people. We find, however, that in 1855, out of 152,113 marriages solemnized, the exact ages of both parties were specified in 87,696 instances. The imperfect information thus obtained as to the ages of bachelors and spinsters at marriage, is compared below with the complete numbers for France in the same year, and will serve to explain how it is that the civil conditions in the two populations are not more dissimilar.

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[*] See Table III, Appendix.

[†] See Table V, Appendix.

Ages.	England.		France.	
	Bachelors.	Spinsters.	Bachelors.	Spinsters.
Under 20	2,054	10,567	7,259	53,212
20–25	39,819	42,706	73,328	104,067
25–30	21,564	16,377	85,726	58,132
30–35	7,391	5,722	45,273	25,535
35–40	2,764	2,352	19,097	11,859
Above 40	2,031	1,922	13,662	9,557
Totals	75,623	79,646	244,345	262,362
Widowed	12,073	8,050	38,990	20,973
Aggregate	87,696	87,696	283,335	283,335

These figures, in combination with those just mentioned, lead to the conclusion that males marry later in France than in England; but that the marriages of females are not much longer postponed in that country than with us.

VII.—*Birth-Rates.*

It would have been well, had it been practicable, to compare the births with the numbers of married women, or women generally, at the child-bearing period of life. However, we are only enabled to compare them with the gross population.*

Births appear to be relatively *most* numerous in the division of Alsace, where marriages are few and late, and *least* numerous in that of Western Normandy, where, though marriages are even less numerous than in Alsace, they are earlier. Some cause, apart from the custom of the people as to marriage, must exist, for such a disparity in the proportion of births. Thus—

	Marriages per 1,000 Inhabitants.	Proportion of Women Marrying under 25 Years of Age.	Births per 1,000 Inhabitants.
Alsace	7·5	36·1	32·3
Western Normandy	7·2	48·1	21·3
Lower Loire	7·4	47·7	24·9

A further examination of the birth-rates in the year 1856, does not present less singular results. Thus, we find in Brittany and the division of the Adour, higher proportions of births than in Lower Garonne and Upper Seine. Comparative lateness and even paucity of marriages do not seem to be at all incompatible with relatively high birth-rates, and *vice versâ.*

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* See Table III, Appendix.

	Marriages per 1,000 Inhabitants.	Proportion of Women Marrying under 25 Years of Age.	Births per 1,000 Inhabitants.
Brittany	7·0	42·7	29·8
Adour	6·9	47·3	25·0
Lower Garonne	8.3	59·7	22·0
Upper Seine	8·0	60·0	23·7

Perplexed by these figures, we may reasonably consult the statistics of neighbouring countries, in order to ascertain what is usual out of France. We shall find that, in the same year (1856), a marriage-rate of 8·5 in England was co-existent with a birth-rate of 35·0 per 1,000 inhabitants; and that Belgium, with a marriage-rate of 7·3, had 29·6 births per 1,000 inhabitants.

Rather more than four births to one marriage were recorded in both these countries. The same may be said of Brittany and Alsace. The divisions affected by exceptional circumstances must, therefore, be looked for among those where the birth-rate is relatively low.

Omitting the divisions of Brittany, Corsica and Alsace, in which alone the full ratio of four births to a marriage was attained, the others, in which, during the years 1855-56-57, not less than 3·4 births to a marriage were recorded, were:—

		Flanders.		Few.	Auvergne.
Late.	Few.	Alps.			
		Mediterranean coast.	Late.	Few.	Adour.

The remaining divisions, in which the proportion ranged from 2·6 to 3·2 births to each marriage, were:—

		Lower Seine.	Late.	Few.	Lorraine.
		Middle Loire.	Late.		Lower Saone.
Late.	Few.	Western Normandy.			
Late.	Few.	Lower Loire.			Lower Garonne.
		Upper Seine.		Few.	Upper Garonne.

In Brittany and Alsace, where births were most numerous compared with marriages, the marriages were *late.* The same may be said of those in the divisions marked above with the word late; in the rest the marriages were comparatively early.

In Brittany, Corsica and Alsace, the marriages were comparatively *few*. This, it is true, will have favoured the calculation of a high relative birth-rate. But the same may be said of the divisions above distinguished by the word few.

If, therefore, it be urged that in Lower Garonne marriages were early and numerous, and that, from this being a new or unusual state of things, the number of births was not correspondingly great; even supposing the facts did not contradict such a statement, it is at least in our power to point to Western Normandy and Lower Loire, for unexceptionable instances of low birth-rates. It may further be added, that were the lowest marriage-rate in any division, substituted in lieu of that observed in Lower Garonne, we should still have to account for a birth-rate so low as to equal only 3·2 times the number of marriages.

The meaning of these statistics will perhaps become more evident when we have considered those of mortality and increase of population.

VIII.—*Death-Rates.*

I have once more to regret the imperfection of the materials at my disposal. Were I in possession of the numbers of the *living* at each age, much more clear and valuable results might be arrived at under this head.

The average death-rate in France was, in the year 1856, 23·2 per 1,000. In Belgium the death-rate was 21·5, and in England it was 20·8 per 1,000, in the same year. This was a peculiarly healthy one for both the last-mentioned countries, but not specially so for France.

The mortality there was highest in the following divisions:*—

B. Brittany (Western).
B. Mediterranean coast.
B. Alps.
Auvergne.
Adour.
B. Corsica.
L. Lower Saone.

In the following divisions it did not deviate widely from the average:—

B. Alsace.
L. Lower Seine.
L. Middle Loire.
L. Upper Garonne.

In the rest, the mortality was relatively low, viz., in the divisions of—

Flanders.
L. Lorraine.
L. Upper Seine.
L. Western Normandy.
L. Lower Loire.
L. Lower Garonne.

It is not an uncommon thing with us to observe a high death-rate where there is a large birth-rate, The same improvident habits and absence of intelligent and conscientious feeling, which too often lead to early and numerous marriages, also tend to augment the number of lives unnecessarily sacrificed. A *low* death-rate, however, is seldom accompanied in England by a corresponding depression in the number of births, and consequently those districts contribute most largely to the increase of the population, *not* where the birth-rates are highest, but where the deaths are least numerous.

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* See Table III, Appendix.

Of the five French divisions which in 1856 exhibited the highest *absolute* birth-rates, four were among the most remarkable for a heavy mortality; the fifth was Alsace, one of the divisions where the mortality came near the national average.

The divisions where the *relative* birth-rates (or the proportions of births to a marriage) appear to be peculiarly low, are marked thus "L." They correspond pretty closely with those in which the *absolute* birth-rates are under the average.

With few births then, we perceive there are generally few deaths; with many births, many deaths. But the mortality, where excessive, is not always rendered so by a mere loss of *infant* life. In Brittany, if not in the Mediterranean coast division, the excess, it would appear, continues through life.

IX.—*Rates of Increase of Population.*

The increase of population in France is not distributed so unequally as in England. The immense growth of Paris is the principal exception to the general stagnation in this respect:—

In the *five years*, 1841-46, the increase was—

		Per Cent.
North France	688,445	or 3·4
South „	484,603	„ 3·4

And in the *ten years* succeeding, it was—

		Per Cent.
North France	431,406	or 2·1
South „	204,732	„ 1·4

During the same period, the increase in England must have been at the rate of nearly 6 per cent. in each *five years*, more or less; the ratio during the ten years 1841-51 having been 13, and during the next ten years, 12 per cent.

The divisions which exhibited the highest rates of increase in the *five* years 1841-46 (when every one increased in population to some extent) were—

	Per Cent.
Mediterranean coast	6·6
Lower Seine	5·6
„ Loire	4·7
Brittany	4·4
Middle Loire	4·4
Alsace	4·2
Corsica	3·9
Auvergne	3·6
Lower Saone	3·4

In the next *ten* years six divisions absolutely lost ground, and the increase in two others was merely nominal. In five, however, the rate exceeded 3 per cent., viz.:—

	Per Cent.
Lower Seine	8·7
Mediterranean coast	6·9
Lower Loire	4·6
Corsica	4·3
Middle Loire	3·4

In these five divisions, therefore, there was an appreciable increase of population, not only in the ten years 1846-56, but also in the five years immediately preceding.

The increase of population in France is principally due to the excess of births over deaths. This was, in the periods alluded to, as under:—

	Excess of Births.	Ascertained Increase.
1841-45	918,713	1,171,583
'46-50	519,897	381,298
'51-55	353,290	256,305

It will be observed that the rate of increase, diminished by a falling off in the births and an augmentation of the deaths, was still further abated by emigration during the ten years 1846-55.

The natural increase in the year 1856, amounted to 3·2 per 1,000, being rather above the average of the preceding ten years, though lower than that of the years 1841-45, and less than one-third of what is usual in England. The excess of births over deaths was greatest in the following divisions:—

	Per 1,000 Inhabitants.
Alsace	9·2
Flanders	6·5
Corsica	6·3
Lower Loire	4·6
Alps	4·1
Middle Loire	4·0
Lorraine	4·0
Lower Seine	3·9

Alsace and Flanders, though at the head of this list, do not figure among the divisions exhibiting the greatest *real* increase in the ten years 1846-56. There was probably a considerable emigration from each of these divisions to other parts of France and across the frontier during that period. Lower Seine and Mediterranean coast may probably have been the chief recipients of the emigrants from these and the remaining divisions.

The greatest *absolute decrease* in population during the ten years was in Lorraine; in Upper Seine and Alsace there was also a decrease, as well as in the divisions of Western Normandy, Adour, and Upper Garonne. If we assume that the average natural increase of population in 1846-55, equalled that observed in 1856 in Alsace and Lorraine, the loss of population during the ten years must have been even greater in the former than in the latter division. If then the people of Alsace had been actuated by the same views as those of Lower Garonne and many other parts of France, it is likely that they would have restricted the births which happened amongst them to a smaller comparative number than they actually did, having seemingly such urgent reason for doing so.

X.—*Concluding Remarks.*

If the facts now stated be carefully examined, it will, I think, be admitted that the increase of population is stringently repressed in *all parts* of France. In the greater portion this is effected both by deferring marriages and by special prudential checks.

It appears certain that the two methods alluded to are by no means equally prevalent in all the French provinces. In Alsace, where marriage is deferred longer than anywhere else, the other check is perhaps not resorted to; for the marriages appear to be not less prolific than in England. In Brittany, too, this would seem to be the case, and perhaps in a few other divisions the depression of births is mainly effected by temporary abstinence from marriage.

However, when we take into consideration that the populations of Alsace and Britanny, divisions where marriages are fewer and longer deferred than usual, yield larger numbers of births than those of any other parts of continental France, we are forced to conclude that the figures on which we are commenting are abnormal, or else that the repressive practices above alluded to prevail to a comparatively great extent in those provinces where, though marriages are numerous, births are few.

In the Appendices will be found evidence that the figures upon which the above statements are based are in accordance with the experience of several years, and the inference is irresistible that the marriage-rate affords no useful criterion of the condition and prospects of French populations, because, owing to the preventive practice, the act of marriage is in France divested of the chief responsibilities which make Englishmen await a favourable opportunity for its completion.

Where (1) the *mortality* is constantly high, or where (2) *prosperity* enables the population to increase with some rapidity, one or other of the checks is relaxed, or is not adopted, and the births are thus allowed to rise to a higher point than usual. Brittany affords a striking example of the former case, but we look in vain for a good illustration of the other.[*]

The population of Alsace, more Germanic than French, perhaps resists the introduction of the preventive practice, and as the number of inhabitants in that division remains almost stationary, the surplus population arising from the excess of births over deaths, has evidently been compelled to emigrate. That emigration, even, is distasteful to the people of this province, seems probable, however, for they have done their utmost, apparently, to repress births by deferring their marriages, and they have also extended the cultivation of the potato, a plant well known to favour the maintenance of a comparatively large population.

It may seem singular that in Alsace, the *most* educated, and in Brittany, the *least* instructed population in France, it equally appears to be the fact that the preventive check is very little used. But while the people of the former division probably act from principle and long established habit, the Bretons seem by their very ignorance and the high mortality which it allows of, to be at once rendered insensible to consequences and freed from the necessity of placing any great restraint upon their inclinations.

Brittany, it has been seen, differs from its neighbours, Western Normandy and Lower Loire, in mortality and births, but *not* in the paucity and lateness of marriages, which in fact characterise them all. We are thus led to think that the preventive practice is accompanied in some cases by an amelioration in the death-rate,[†] and which again by leaving fewer vacant places in an almost stationary population, would render the practice itself the more imperatively necessary.

Mere ignorance, again, must not be taken as a sufficient cause for a high rate of mortality; for although Brittany, the most ignorant, is also the most unhealthy division, and though the high rate of mortality observed there appears to affect both sexes of all ages, instead of being confined to a mere sacrifice of infant life, it is nevertheless the fact that the people of the Lower Loire are almost as uneducated, and among them a *much less* excessive mortality prevails.

To resume. The population of France at the higher ages, contains at least as large a proportion of married persons as that of England. Therefore marriage, though deferred, is not foregone to a greater extent there than here. Fecundity is seemingly as great there as here, where suffered to exert itself without artificial hindrance.

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[*] In the town of St. Etienne (department Loire, population 94,432) 993 marriages and 3,686 births were recorded in 1856, the deaths being only 2,334 in number.

[†] Not a sufficient amelioration, however, to render the French rural districts more healthful than ours.

There remains, therefore, only to attribute the low ratio of births to *late marriages* and *artificial hindrances to fecundity*, unless indeed fecundity itself varies from natural causes in a manner which (being complicated with other influences tending to diminish the number of births) we have no means of measuring.

The causes which are found to operate in our own country, upon the number of births, are reducible to the varying means of subsistence and the more constant powers of fecundity and of prudential restraint. If unchecked by failure of means, the proportion of population in the married state tends to rise and the births attain a high level, say 38 to 40 per 1,000 inhabitants. Where amplitude of material resources is coincident with recklessness as to the future, a still higher ratio of births may be obtained. But where opportunities of finding subsistence are limited, the very healthfulness of a place often brings into operation the prudential check, and prevents the births rising to nearly so high a point as they otherwise might easily reach. For in that case the *surplus* of births over deaths tends to accommodate itself to the opportunities alluded to, and if the deaths be not numerous, this surplus may be considerable, even with a birth-rate of no more than 28 or 30 per 1,000.

In France the proportion of births is about 26·4 per 1,000, while the death-rate, which is a little higher than with us, reaches about 23·2.

Shall we venture to assert that almost all France is in an unprosperous condition, or shall we rather decide that the low ratio of births and the consequent stationary condition of the French population is the result of a system of restraint, productive of health and comfort to those who practise it and favourable to the accumulation of wealth?

The statistics of French trade and production ought to enable us to answer this question. If we find the land badly cultivated and comparatively unproductive, the trade limited and unprosperous, and the manufacturing centres dividing with the metropolis such increase of population as actually takes place; if we find the average means of the Frenchman (measured by the table spread for the nation by agriculture and commerce) to be meagre and unsatisfactory; if we find both the education and the mortality of France in a worse condition than among ourselves; I am afraid we must rather ascribe the low ratios of births to necessity than to choice; especially as there is reason to suppose that the ordinary restrictions are removed wherever successful manufactures encourage such a proceeding, the birth-rates in such neighbourhoods being comparatively high.

Of course, in making such an estimate as this, it would become necessary to compare the annual consumption with the modicum of food and raiment which *in the climate* and *according to the manners* of France are necessary for comfortable subsistence. A difficult point to determine, but one which may be rendered easier of solution by a number of calculations published by M. Le Play, and by the estimates in the official agricultural statistics. I must leave this very interesting subject to other and abler inquirers than myself; but I may add, that the growth of the towns in the face of a stationary number of provincial constituents, would indicate an unsatisfactory state of things, unless these towns were supported by external trade, or derived their increase from the augmented means and consequent expenditure of their rural customers. Perhaps the agricultural class, made painfully aware of the limit of subsistence by the subdivided state of the land, feel the necessity of restraint more acutely than the denizens of cities, among whom the success of individuals partakes more of the character of a lottery. The surplus inhabitants from the country districts would also crowd into the towns in search of employment.

May there not, indeed, be good ground for thinking that the circumstances of France do not admit of a change for the better, unless one of a very gradual description? The diminutive allotments of land are perhaps in most cases incapable of further subdivision. They are burdened with an infinity of mortgages in favour of the relatives of their former possessors. The present holders have not room for the advantageous introduction of modern improvements, nor the capital which would be required for bringing about such improvements, nor the intelligence necessary for making the best of what they have. The bulk of the population, being themselves producers, do not come into the market except to compete with one another; consequently prices are low for that portion of their crops which they are compelled to realize. The low prices of provisions are thus a positive evil to the greater part of the population. Until, by the development of French manufactures and commerce, more favourable returns are secured to the producer; until the system of small allotments begins to be abandoned, and the proprietors, disposing of their land, begin to carry their labour and capital to the best market; until then, we may perhaps see no change in a condition of things which must make Frenchmen feel as if in the grasp of an inexorable destiny, and which has perhaps produced that passion for war which unfortunately distinguishes our neighbours on the other side of the channel. Scarcely any poor rural family can in France be raised from obscurity except by the military prowess of one of its members. And the gaps left in the population by the conscription must be a source of relief to a people so hindered from obeying the natural tendency to comply with the law, which bids us "increase and "multiply, and replenish the earth."

One word more, and I have done. Does it not seem an unnatural and short-sighted proceeding, to endeavour to *restrict the increase* of the human race, that they may not outstrip the means of subsistence, rather than encourage them to go on conquering new realms of science and art, and, what is more to the purpose, extending the production of things useful and necessary, so as to support the increasing population in a *constantly improving* manner, until perhaps a really humane and civilized state of society is at last arrived at?

If we compare the experience of England and Ireland, it may be seen that the spirit and character of a people alone determine their destiny, and that while one race will multiply its numbers until the lowest form of subsistence fails them, another will increase as rapidly, and constantly keep improving its social condition. Therefore I say, let not any theory sway us which regards men as merely units, and leaves out of view their ambition and their powers; let us rather believe that, with faith in the future, we may go on adding new nations to the Anglo-Saxon race, and continually expanding our resources and our power, while nations which, like France, prefer what is really a stagnant *protective** system, as opposed to one of free competition, may preserve but can scarcely increase either their power or their civilization.

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* That this is true will appear on considering that the essence of protection is to repress production, from a fear of its outstripping the demand; in this case, the production of men, not of goods, has to be restricted, but the object is the same, viz., to raise the market price of the restricted article, or hinder it from falling.

APPENDIX.

TABLE I.—*Centesimal Proportion of* TOTAL VALUE *of Agricultural Produce coming under each of the Heads specified.*

Divisions.	Wheat and Oats.	Rye, Meteil, and Buck-wheat.	Barley.	Maize.	Wine.	Artificial Meadows.	Potatoes.	Roots, Beans, &c.	Olives, Mulberries, &c.	Pasturages.
Flanders	46·7	9·3	3·5	—	·9	7·3	3·0	21·3	1·5	6·5
Lower Seine	55·2	7·1	1·8	—	4·0	11·4	2·4	12·3	·5	5·3
Western Normandy and Maine	42·9	11·5	7·1	—	·3	7·8	1·5	11·7	·5	16·5
Western Brittany	36·4	27·9	4·4	—	·1	3·3	2·7	12·0	·7	12·4
Lower Loire	45·9	8·1	3·4	·3	6·5	5·5	2·5	14·3	·4	13·1
Upper Seine	49·7	7·3	4·9	·3	10·0	8·7	2·8	7·6	·2	8·6
Middle Loire	43·4	10·8	4·0	—	12·8	7·4	2·1	5·8	·4	13·3
Lorraine, &c.	45·6	6·4	3·0	·4	6·7	5·8	8·8	8·8	·1	14·4
Alsace	29·1	6·3	8·7	·5	7·1	4·6	13·1	13·5	2·4	14·7
Average (northern divisions)	46·4	9·8	4·0	·1	5·0	7·6	3·5	12·5	·7	10·4
Lower Saone	36·6	10·9	2·3	2·8	14·6	5·1	4·5	7·8	·9	14·7
Alps	35·9	10·8	·6	·1	8·3	7·8	6·7	4·6	9·3	16·0
Mediterranean coast	38·4	1·5	·5	·1	26·6	5·8	2·4	5·2	14·3	5·3
Auvergne, &c.	21·4	29·1	2·3	·3	5·4	2·2	4·6	5·1	2·2	27·4
Lower Garonne	39·4	4·4	·8	5·2	24·2	3·1	2·5	6·7	1·4	12·2
Adour	25·1	7·3	·6	22·3	10·8	1·3	1·5	8·7	1·3	21·1
Upper Garonne	42·0	8·1	·5	8·6	13·6	6·7	3·5	6·3	·9	9·9
Corsica	41·8	1·7	9·4	1·0	20·0	·7	2·7	4·0	16·7	2·0
Average (southern divisions)	34·2	11·6	1·4	3·9	15·6	4·3	3·7	6·2	3·8	15·3
Average (France)	41·9	10·5	3·1	1·5	8·9	6·4	3·5	10·3	1·8	12·2

TABLE II.—*Value of Crops and Animal Products, in Francs* PER HEAD, *on Population of* 1856.

Divisions.	Wheat and Oats.	Rye, Meteil, and Buck-wheat.	Barley	Maize.	Wine.	Artificial Meadows.	Potatoes.	Beet, Roots, Beans, &c.	Olives, Mulberries, &c.	Pasturages.	Domestic Animals.	Total.
Flanders	90	18	7	—	2	14	6	41	3	12	107	299
Lower Seine	83	11	3	—	6	17	4	19	1	8	94	245
Western Normandy, &c.	70	19	12	—	1	13	2	19	1	27	70	235
Western Brittany.........	39	30	5	—	—	4	3	13	1	13	52	159
Lower Loire	79	14	6	—	11	9	4	25	1	23	70	242
Upper Seine	118	17	12	1	24	21	7	18	1	20	125	362
Middle Loire................	82	20	8	—	24	14	4	11	1	25	92	281
Lorraine, &c................	78	11	5	1	12	10	15	15	—	25	85	256
Alsace	38	8	11	1	9	6	17	18	3	19	82	211
Northern divisions	78	16	7	—	8	13	6	21	1	17	88	256
Lower Saone................	52	15	3	4	21	7	6	11	1	21	65	206
Alps	51	15	1	—	12	11	9	7	13	23	56	198
Mediterranean coast	52	2	1	—	36	8	3	7	19	7	51	187
Auvergne, &c.	28	38	3	—	7	3	6	7	3	36	59	191
Lower Garonne	62	7	1	8	38	5	4	10	2	19	56	212
Adour	24	7	1	21	10	1	1	8	1	20	48	142
Upper Garonne	62	12	1	13	20	10	5	9	1	15	63	211
Corsica	52	2	12	1	25	1	3	5	21	2	33	157
Southern divisions	48	16	2	5	22	6	5	9	5	21	57	197
France	66	16	5	2	14	10	6	16	3	19	75	232

TABLE III.—*Proportion of Persons Married who could not Sign their Names, and of Marriages, Births, and Deaths to Population in* 1856.

Divisions.	To every 100 Marriages, the Number who could not Sign.		To every 1,000 Inhabitants.		
	Males.	Females.	Marriages.	Births.*	Deaths.*
Flanders	30·2	39·6	7·9	28·1	21·6
Lower Seine†	12·6	21·8	8·9	27·4	23·5
Western Normandy, &c.	26·1	32·8	7·2	21·3	19·9
„ Brittany	57·1	68·0	7·0	29·8	28·3
Lower Loire	46·4	66·0	7·4	24·9	20·3
Upper Seine	14·3	22·8	8·0	23·7	21·1
Middle Loire	49·0	61·8	7·7	27·3	23·3
Lorraine, &c.	5·4	13·2	7·9	25·2	21·2
Alsace	2·5	5·9	7·5	32·3	23·1
Lower Saone	27·0	41·4	8·1	27·1	24·3
Alps	34·4	58·8	8·4	29·5	25·4
Mediterranean coast	33·7	61·4	8·1	28·9	27·0
Auvergne, &c.	45·7	66·3	7·7	27·9	24·9
Lower Garonne	42·7	68·0	8·3	22·0	21·2
Adour	35·3	72·4	6·9	25·0	24·7
Upper Garonne	38·8	69·7	7·7	24·6	23·7
Corsica	38·1	82·5	8·2	30·8	24·5
France	31·1	47·0	7·9	26·4	23·2
† Department Seine (Paris)	5·3	15·1	10·3	31·6	24·3
Rest of Lower Seine	18·8	27·4	7·9	24·7	23·0

* Still-births not included.

TABLE IV.—*Proportions Married in the Year* 1856, *at the respective Ages, under* 25, 25 *to* 30, *and above* 30.

Divisions.	To every 100 Males.			To every 100 Females.		
	Under 25.	25 to 30.	30 and upwards.	Under 25.	25 to 30.	30 and upwards.
Flanders	31·0	33·6	35·4	55·8	23·0	21·2
Lower Seine*	27·8	33·8	38·4	57·5	19·8	22·6
Western Normandy and Maine	24·4	31·5	44·1	48·1	24·1	27·7
Western Brittany	20·8	31·5	47·7	42·7	25·9	31·3
Lower Loire	23·3	33·3	43·4	47·7	24·7	27·6
Upper Seine	29·1	36·3	34·7	60·0	20·8	19·3
Middle Loire	32·1	34·5	33·4	60·2	19·9	19·9
Lorraine, &c.	18·6	33·8	47·6	41·2	28·1	30·7
Alsace	16·3	32·9	50·8	36·1	31·9	32·0
Lower Saone	21·8	33·3	44·9	53·9	22·5	23·6
Alps	21·6	29·9	48·5	51·5	24·3	24·2
Mediterranean coast	28·4	32·9	38·7	63·2	19·4	17·3
Auvergne, &c.	25·0	32·6	42·3	54·9	23·5	21·6
Lower Garonne	31·5	30·9	37·6	59·7	18·9	21·3
Adour	18·5	30·8	50·7	47·8	25·9	26·7
Upper Garonne	27·7	33·4	38·9	59·7	21·6	18·7
Corsica	26·2	30·9	42·9	58·3	21·3	20·5
France	26·0	33·0	41·0	53·9	22·6	23·5
* Department Seine (Paris)	17·9	34·9	47·2	49·5	22·7	27·9
Rest of Lower Seine	36·1	32·9	31·0	64·2	17·5	18·2

TABLE V.—*Proportion of Population Unmarried*, 1856.

Age.	Males.			Females.		
	Population.	Unmarried.	Per Cent. Unmarried.	Population.	Unmarried.	Per Cent. Unmarried.
0—15	5,011,917	5,011,917	100·0	4,874,837	4,874,837	100·0
15—20	1,535,825	1,532,236	99·8	1,530,077	1,454,587	95·1
20—30	2,766,946	1,940,358	70·1	3,037,883	1,617,829	53·3
30—40	2,683,605	693,168	25·8	2,646,504	591,045	22·3
40—50	2,300,858	314,516	13·7	2,261,996	330,932	14·6
50—60	1,815,659	177,437	9·8	1,834,038	227,839	12·4
60—70	1,079,961	86,078	8·0	1,252,803	147,938	11·8
70—80	505,568	34,591	6·8	568,925	61,501	10·8
80—90	94,096	6,597	7·0	123,020	11,964	9·7
90 and upwards....	5,879	537	9·1	9,361	1,052	11·2
	17,800,314	9,797,435	—	18,139,444	9,319,524	—

Age.	Great Britain and Islands in British Seas, 1851.					
	Males.			Females.		
	Population.	Unmarried.	Per Cent. Unmarried.	Population.	Unmarried.	Per Cent. Unmarried.
0—15	3,739,324	3,739,324	100·0	3,692,218	3,692,218	100·0
15—20	1,025,419	1,020,878	99·6	1,045,317	1,019,398	97·5
20—30	1,738,753	1,110,421	63·9	1,934,189	1,086,256	56·2
30—40	1,323,264	303,491	22·9	1,418,353	320,969	22·6
40—50	1,001,236	137,418	13·7	1,056,705	156,001	14·8
50—60	695,949	75,382	10·8	749,883	97,294	13·0
60—70	437,396	41,192	9·4	507,750	64,861	12·8
70—80	208,661	17,415	8·3	256,143	32,236	12·6
80—90	50,038	3,483	7·0	69,559	8,778	12·6
90 and upwards....	3,518	314	8·9	6,302	799	12·7
	10,223,558	6,449,318	—	10,735,919	6,478,805	—

TABLE VI.—*Marriage-Rates. The Order in which the Divisions are placed, being nearly that which they took in* 1857, *Ranging from the Highest to the Lowest Rate.*

	Marriages to every 1,000 Inhabitants.				
	1842.	1844.	1855.	1856.	1857.
Highest—					
Lower Seine	9·0	8·5	8·8	8·9	9·2
„ Garonne	8·6	8·3	8·1	8·3	8·8
Middle Loire	9·6	8·8	8·6	7·7*	8·4
Flanders	8·1	7·9	7·7*	7·9	8·3
Upper Seine	8·2	8·1	9·0	8·0	8·1
Lower Saone	8·4	7·8	8·0	8·1	8·1
Mediterranean coast	8·3	7·9	8·1	8·1	8·0
Lowest—					
Lorraine	7·5	7·5	7·4	7·9	8·3*
Western Brittany	7·5	7·6	6·8	7·0	8·0
Lower Loire	8·7*	8·0*	7·3	7·4	8·0
Alsace	7·9	7·4	6·0	7·5	7·9
Alps	7·8	7·6	8·4*	8·4*	7·9
Auvergne	7·9	7·7	7·9	7·7	7·9
Western Normandy	7·6	7·5	7·2	7·2	7·8
Upper Garonne	7·8	7·4	8·1*	7·7	7·6
Corsica	7·3	7·1	6·7	8·2*	7·2
Adour	6·8	7·2	6·6	6·9	6·5
Average of France	8·2	7·9	7·9	7·9	8·2

Note.—An asterisk (*) has been placed against those ratios, which do not accord with the order of divisions adopted above. On the whole, the figures exhibit a great deal of regularity.

The ratio 8·9 per 1,000, in the division of the Lower Seine in 1856, was compounded of 10·3 per 1,000 in department Seine (Paris), and 7·9 per 1,000 in the remaining departments.

TABLE VII.—*Birth-Rates. The Order in which the Divisions are placed, being that which they took in* 1856, *Ranging from the Highest to the Lowest Rate.*

	Births (Living) to 1,000 Inhabitants.				
	1842.	1844.	1855.	1856.	1857.
Highest—					
Alsace	37·0	34·6	27·3	32·3	30·9
Corsica	32·0	30·6	28·7	30·8	28·9
Western Brittany	31·7	31·3	27·1	29·8	30·3
Alps	31·6	29·7	28·6	29·5	28·0
Mediterranean coast	31·9	29·5	27·2	28·9	29·3
Next to Highest—					
Flanders	29·0	27·6	26·4	28·1	29·6*
Auvergne	30·4	29·0	26·8	27·9	26·4
Lower Seine	28·1*	26·5*	25·9	27·4	28·0
Middle Loire	31·1	28·6	26·6	27·3	26·0
Lower Saone	30·2	27·7	24·9*	27·1	26·5
Third Order—					
Lorraine	27·9	27·3	23·6	25·2	25·6
Adour	28·0	27·2	25·0	25·0	23·6
Lower Loire	28·1	26·6	23·7	24·9	23·6
Upper Garonne	28·9	27·2	23·5	24·6	23·1
Lowest—					
Upper Seine	25·2	24·1	22·5	23·7	23·0
Lower Garonne	24·7	24·4	22·1	22·0	21·7
Western Normandy	22·6	21·8	20·5	21·3	21·0
Average of France	28·7	27·3	25·0	26·4	26·1

* *Note.*—The irregular ratios are marked with an asterisk, and it will be seen at a glance how little they disturb the general order of the divisions.

TABLE VIII.—*Death-Rates. The Order in which the Divisions are placed, being in accordance with that of the Minimum Rates in* 1855-57, *Ranging from the Highest to the Lowest Rate.*

	Deaths (exclusive of Still-births) to 1,000 Inhabitants.				
	1842.	1844.	1855.	1856.	1857.
Highest—					
Western Brittany	26·2	24·0	29·1	28·3	27·2
Mediterranean coast	30·7	25·2	30·4	27·0	25·9
Auvergne	22·8*	22·1*	25·6	24·9	26·6
Alps	25·1	24·0	27·9	25·4	24·7
Lower Saone	25·3	23·6	26·0	24·3	26·0
„ Seine	26·6	23·1	27·7	23·5*	25·9
Medium—					
Adour	22·8*	20·5*	31·5*	24·7*	23·5
Middle Loire	24·5	21·0	24·7	23·3	25·0*
Alsace	27·0*	23·7*	32·4*	23·1	23·3
Upper Garonne	23·1*	22·1	24·4	23·7	22·8
Corsica	21·5*	20·8	32·3*	24·5*	22·6
Lowest—					
Flanders	24·5	22·2*	25·9*	21·6	22·7*
Lower Garonne	23·7	19·8	23·7	21·2	21·7
Upper Seine	22·9	20·6	23·0	21·1	21·6
Lorraine	24·1	21·9*	25·7*	21·2	20·9
Lower Loire	22·1	19·1	20·5	20·3	21·0
Western Normandy	21·0	19·0	23·3	19·9	21·1
Average of France	24·4	21·9	26·0	23·2	23·8

Note.—The irregular ratios are again distinguished by an asterisk, and are rather numerous. For Adour and Corsica, however, the ratios appear sometimes too high, and then again too low for the position assigned, and these contradictory fluctuations may be considered as neutralising each other.

TABLE IX.—***Ratios of Births, Deaths, and Marriages in certain Departments, showing the extreme Birth and Death-Rates, in the Groups of Departments constituting the several Divisions.***

Division.	Department.	Per 1,000 Inhabitants.		
		Births.	Deaths.	Marriages.
Flanders	Nord	32·5	22·7	8·2
	Ardennes	23·1	19·1	7·4
Lower Seine	Seine	31·6	24·3	10·3
	Seine Inferieure	28·2	24·8	7·9
	Eure	19·2	21·3	7·1
Western Normandy	Mayenne	23·3	21·3	7·6
	Orne	19·0	18·8	6·7
Western Brittany	Finistere	33·3	31·6	8·6
	Morbihan	29·2	32·9	6·6
	Ille and Vilaine	26·6	22·9	5·5
Lower Loire	Loire Inferieure	26·9	21·8	7·2
	Maine and Loire	21·8	19·5	7·2
	Deux Sevres	23·0	18·2	6·9
Upper Seine	Marne	26·1	21·9	8·0
	Yonne	22·2	20·8	7·4
	Meuse	23·5	19·6	7·7
Middle Loire	Loiret	30·1	24·0	7·8
	Indre	28·1	26·2	7·3
	„ and Loire	20·8	19·0	7·7
Lorraine	Moselle	26·2	20·6	7·0
	Vosges	25·3	23·2	8·7
	Meurthe	23·4	19·3	7·8
Alsace	Rhin Haut	33·7	23·4	7·9
	„ Bas	31·0	22·9	7·2
Lower Saone	Isere	28·6	27·7	7·0
	Saone and Loire	28·5	22·7	8·5
	Ain	23·3	22·9	7·2
Alps	Ardeche	31·6	24·9	8·4
	Alpes Hautes	29·8	29·1	6·9
	Drome	27·2	23·2	8·6
Mediterranean coast	Gard	31·5	28·4	8·2
	Var	24·3	24·7	8·1
Auvergne	Loire	34·1	25·8	8·5
	Aveyron	29·0	29·2	7·5
	Creuse	21·7	20·9	6·6
Lower Garonne	Dordogne	25·3	24·0	8·3
	Lot and Garonne	18·5	21·5	8·2
	Gers	18·7	18·1	8·2
Adour	Landes	28·3	25·5	8·0
	Pyrenees Hautes	23·0	23·0	6·1
Upper Garonne	Pyrenees Orientales	30·9	27·5	8·1
	Tarn and Garonne	20·2	21·9	8·2
	Garonne Haut	22·0	20·9	7·7

TABLE X.—***Ratios of Births, Deaths, and Marriages to Population in England and Wales, France, and Belgium.***

	Per 1,000 Inhabitants.								
	England and Wales.			France.			Belgium.		
	Births.	Deaths.	Marriages.	Births.	Deaths.	Marriages.	Births.	Deaths.	Marriages.
1841	32·4	21·7	7·7	28·5	23·5	8·3	33·9	23·8	7·3
’42	32·3	21·8	7·4	28·5	24·3	8·1	32·6	24·9	7·0
’43	32·5	21·4	7·6	28·4	23·4	8·2	31·9	23·3	6·8
’44	32·9	21·7	8·0	27·7	22·3	8·0	31·8	22·5	7·0
1845	32·7	21·0	8·6	28·3	21·5	—	32·2	23·0	6·9
’46	34·0	23·1	8·6	27·8	23·5	7·6	27·8	25·1	6·0
’47	31·6	24·8	8·0	25·9	24·1	7·0	27·2	27·7	5·6
’48	32·7	23·2	8·0	26·7	23·7	8·2	27·8	25·0	6·6
’49	33·2	25·3	8·2	27·9	27·6	7·8	30·5	27·9	7·3
1850	33·8	21·0	8·7	27·0	21·8	8·4	30·0	21·2	7·7
’51	34·6	22·2	8·7	27·4	22·8	8·0	30·3	21·4	7·5
’52	34·6	22·6	8·8	26·8	22·5	7·8	30·1	21·5	7·0
’53	33·6	23·1	9·0	25·9	22·0	7·7	28·5	22·4	6·8
’54	34·5	23·8	8·7	25·7	27·6	7·5	29·3	22·9	6·5
1855	34·2	22·9	8·2	25·1	26·1	7·9	27·8	24·9	6·6
’56	35·0	20·8	8·5	26·4	23·2	7·9	29·6	21·5	7·3
’37 ...	34·8	22·0	8·4	26·0	23·8	8·2	31·4	22·7	8·2
1841–45	32·6	21·5	7·9	28·3	23·0	8·1	32·5	23·5	7·0
’46–50	33·1	23·5	8·3	27·1	24·1	7·8	28·7	25·4	6·6
’51–57	34·5	22·5	8·6	26·2	24·0	7·9	29·6	22·5	7·1

TABLE XI.—***Births to One Marriage. The Divisions are Arranged in the Order of the Ratios for* 1855-56-57, *beginning with the Highest.***

	1842 and 1844.	1855-56-57.	Decrease.
Highest –			
Alsace	4·7	4·2	0·5
Corsica	4·4	4·0	0·4
Western Brittany	4·2	4·0	0·2
Adour	3·9	3·7	0·2
Alps	4·0	3·5	0·5
Mediterranean coast	3·8	3·5	0·3
Flanders	3·5	3·5	—
Auvergne	3·8	3·4	0·4
Lowest—			
Lower Saone	3·6	3·2	0·4
Middle Loire	3·3	3·2	0·1
Lower „	3·3	3·2	0·1
Lorraine	3·7	3·1	0·6
Upper Garonne	3·7	3·0	0·7
Lower Seine	3·1	3·0	0·1
Upper „	3·0	2·8	0·2
Western Normandy	2·9	2·8	0·1
Lower Garonne	2·9	2·6	0·3

TABLE XII.—*Population, with Births, Deaths, and*

	Population.			Births (Living).		
	1841.	1846.	1856.	1842.	1844.	1856.
Flemish frontier........	3,191,379	3,283,510	3,369,495	92,591	90,708	94,616
Lower Seine	3,847,084	4,062,136	4,414,254	107,919	107,478	120,763
Western Normandy	2,367,531	2,387,831	2,314,760	53,618	51,945	49,838
,, Brittany	2,180,755	2,276,408	2,282,955	69,192	71,308	67,985
Lower Loire	1,936,184	2,027,488	2,120,497	54,352	53,944	52,764
Upper Seine	1,955,028	1,988,359	1,949,994	49,272	47,928	46,120
Middle Loire	1,706,309	1,781,645	1,842,009	53,103	50,967	50,270
Lorraine, &c.	1,938,770	1,961,415	1,880,518	54,133	53,539	47,342
Alsace	1,024,888	1,067,581	1,063,297	37,916	36,958	34,316
	20,147,928	20,836,378	21,267,779	572,096	564,775	564,014
Lower Saone	2,313,612	2,392,658	2,446,266	69,985	66,172	66,156
Alps	964,606	989,464	989,821	30,458	29,357	29,185
Mediterranean coast	1,697,498	1,809,332	1,934,300	54,203	53,357	55,922
Auvergne, &c.	3,285,692	3,402,940	3,444,589	99,911	98,600	96,191
Lower Garonne	2,832,694	2,908,846	2,937,228	70,101	70,914	64,589
Adour	983,956	1,007,337	992,130	27,505	27,390	24,763
Upper Garonne	1,782,729	1,826,105	1,788,068	51,559	49,721	43,900
Corsica	221,463	230,171	240,183	7,078	7,038	7,396
	14,082,250	14,566,858	14,771,585	410,800	402,549	388,102
France	34,230,178	35,403,236	36,039,364	982,896	967,324	952,116

TABLE XIII.—*Showing the Departments comprised in each Division.*

FLANDERS.—Departments: Nord, Pas de Calais, Somme, Aisne, Ardennes.

LOWER SEINE.—Departments: Seine Inferieure, Oise, Seine and Marne, Seine, Seine and Oise, Eure and Loir, Eure.

WESTERN NORMANDY AND MAINE.—Departments: Calvados, Manche, Orne, Mayenne, Sarthe.

WESTERN BRITTANY.—Departments: Ille and Vilaine, Morbihan, Cotes du Nord, Finistere.

LOWER LOIRE.—Departments: Loire Inferieure, Maine and Loire, Vendee, Deux Sevres, Vienne.

UPPER SEINE.—Departments: Meuse, Marne, Haute Marne, Aube, Yonne, Cote d'Or.

MIDDLE LOIRE.—Departments: Loiret, Loir and Cher, Indre and Loir, Indre, Cher, Nievre.

LORRAINE, &C.—Departments: Moselle, Meurthe, Vosges, Haute Saone, Doubs.

Marriages in France during the Three Years stated.

Deaths.			Marriages.			
1842.	1844.	1856.	1842.	1844.	1856.	
78,250	72,869	72,634	25,934	25,989	26,695	Flemish frontier
102,318	93,699	103,864	34,554	34,701	39,107	Lower Seine
49,636	45,447	46,617	18,033	17,834	16,988	Western Normandy
57,192	54,620	64,718	16,392	17,410	16,068	„ Brittany
42,746	38,647	43,013	16,878	16,298	15,643	Lower Loire
44,683	40,941	41,236	16,064	16,031	15,547	Upper Seine
41,797	37,393	42,920	16,338	15,636	14,171	Middle Loire
46,749	42,913	39,808	14,482	14,761	14,905	Lorraine, &c.
27,673	25,324	24,601	8,122	7,912	8,005	Alsace
491,044	451,853	479,411	166,797	166,572	167,129	
58,482	56,582	59,488	19,512	18,637	19,827	Lower Saone
24,186	23,763	25,149	7,553	7,492	8,283	Alps
52,043	45,667	52,233	14,164	14,359	15,749	Mediterranean coast
74,908	75,178	85,724	25,796	26,096	26,382	Auvergne, &c.
67,132	57,672	62,316	24,296	24,105	24,439	Lower Garonne
22,457	20,683	24,470	6,689	7,213	6,799	Adour
41,138	40,349	42,414	13,990	13,564	13,818	Upper Garonne
4,762	4,779	5,877	1,615	1,629	1,975	Corsica
345,108	324,673	357,671	113,615	113,095	117,272	
836,152	776,526	837,082	280,412	279,667	284,401	France

TABLE XIII.—*Showing the Departments—Contd.*

ALSACE.—Departments: Bas Rhin, Haut Rhin.

LOWER SAONE.—Departments: Jura, Saone and Loire, Ain, Rhone, Isere.

ALPS.—Departments: Hautes Alpes, Basses Alpes, Drome, Ardeche.

MEDITERRANEAN COAST.—Departments: Var, Bouches du Rhone, Vaucluse, Gard, Herault.

AUVERGNE, &c.—Departments: Haute Vienne, Creuse, Allier, Puy de Dome, Loire, Haute Loire, Lozere, Aveyron, Cantal, Correze.

LOWER GARONNE.—Departments: Charente, Charente Inferieure, Gironde, Dordogne, Lot, Lot and Garonne, Gers.

ADOUR.—Departments: Landes, Basses Pyrenees, Hautes Pyrenees.

UPPER GARONNE.—Departments: Tarn and Garonne, Tarn, Haut Garonne, Ariege, Aude, Pyrenees Orientales.

CORSICA.—Department: Corse.

MISCELLANEA.

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This Paper, by Professor Jevons, was read in Section F of the British Association, in 1862, but has not been hitherto printed.

I.—*Brief Account of a General Mathematical Theory of Political Economy.*

1. The following paper briefly describes the nature of a Theory of Economy which will reduce the main problem of this science to a mathematical form. Economy, indeed, being concerned with quantities, has always of necessity been mathematical in its subject, but the strict and general statement, and the easy comprehension of its quantitative laws has been prevented by a neglect of those powerful methods of expression which have been applied to most other sciences with so much success. It is not to be supposed, however, that because economy becomes mathematical in form, it will, therefore, become a matter of rigorous calculation. Its mathematical principles may become formal and certain, while its individual data remain as inexact as ever.

2. A true theory of economy can only be attained by going back to the great springs of human action—*the feelings of pleasure and pain.* A large part of such feelings arise periodically from the ordinary wants and desires of body or mind, and from the painful exertion we are continually prompted to undergo that we may satisfy our wants.

Economy investigates the relations of ordinary pleasures and pains thus arising, and it has a wide enough field of inquiry. But economy does not treat of all human motives. There are motives nearly always present with us, arising from conscience, compassion, or from some moral or religious source, which economy cannot and does not pretend to treat. These will remain to us as outstanding and disturbing forces; they must be treated, if at all, by other appropriate branches of knowledge.

3. We always treat feelings as being capable of *more or less,* and I now hold that they are quantities capable of scientific treatment.

Our estimation of the comparative amounts of feeling is performed in the act of choice or volition. Our choice of one course out of two or more proves that, in our estimation, this course promises the greatest balance of pleasure. When there is a large overbalancing force on one side, indeed, the estimation of the amount of this balance is no doubt very rude; but all the critical points of the theory will depend on that nice estimation of the opposing motives which we make when these are nearly equal, and we hesitate between them.

4. As several writers have previously remarked, feelings have two dimensions, *intension* and *duration*. A pleasure or a pain may be either weak or intense in any indivisible moment; it may also last a long or a short time. If the intensity remain uniform, the quantity of feeling generated is found by multiplying the units of intensity into the units of duration. But if the intensity, as is usually the case, varies as some function of the time, the quantity of feeling is got by infinitesimal summation or *integration*.

Thus, if the duration of a feeling be represented by the abscissa of a curve, the intensity will be the ordinate, and the quantity of feeling will be the area.

5. Pleasure and pain, of course, are opposed as positive and negative quantities.

6. A principle of the mind which any true theory must take into account is that of *foresight*. Every expected future pleasure or pain affects us with similar feelings in the present time, but with an intensity diminished in some proportion to its uncertainty and its remoteness in time. But the effects of *foresight* merely complicate without altering the other parts of the theory.

7. Such are the main principles of feeling on which economy is founded. A second part of the theory proceeds from feelings to the *useful objects* or *utilities* by which pleasurable feeling is increased or pain removed.

An object is useful when it either affects the senses pleasurably in the present moment, or when, by foresight, it is expected that it will do so at some future time. Thus we must carefully distinguish *actual utility* in present use from *estimated future utility*, which yet, by allowing for the imperfect force of anticipation, and for the uncertainty of future events, gives a certain present utility.

8. *Amount of utility* corresponds to amount of pleasure produced. But the continued uniform application of an useful object to the senses or the desires, will not commonly produce uniform amounts of pleasure. Every appetite or sense is more or less rapidly satiated. A certain quantity of an object received, a further quantity is indifferent to us, or may even excite disgust. Every successive application will commonly excite the feelings less intensely than the previous application. The utility of the last supply of an object, then, usually decreases in some proportion, or as some function of the whole quantity received. This variation theoretically existing even in the smallest quantities, we must recede to infinitesimals, and what we shall call the *coefficient of utility*, is the ratio between the last increment or infinitely small supply of the object, and the increment of pleasure which it occasions, both, of course, estimated in their appropriate units.

9. The coefficient of utility is, then, some generally diminishing function of the whole quantity of the object consumed. Here is the most important law of the whole theory.

This function of utility is peculiar to each kind of object, and more or less to each individual. Thus, the appetite for dry bread is much more rapidly satisfied than that for wine, for clothes, for handsome furniture, for works of art, or, finally, for money. And every one has his own peculiar tastes in which he is nearly insatiable.

10. A third part of the theory now treats of *labour;* which, although the means by which we seek pleasure, is always accompanied by a certain painful exertion, rapidly increasing as some function of the intensity or the duration of the labour. Thus, labour will be exerted both in intensity and duration until a further increment will be more painful than the increment of produce thereby obtained is pleasurable. Here labour will stop, but up to this point it will always be accompanied by an excess of pleasure.

It is obvious that the final point of labour will depend upon the final ratio of utility of the object produced.

11. I assume, as obviously true, that the abilities of men are infinitely varied, whether by nature or by education, so that both the same person may vary in his power of producing different objects, and any two persons may vary in respect of the same object.

This, indeed, is in direct opposition to the erroneous simplification of the science effected by Ricardo, when he assumed that all labourers have a certain uniform power; the higher classes of mechanics and other skilled or learned producers being treated as mere exceptions to the rule.

12. The theory of rent, which here comes in, is not materially different from that of Dr. Anderson and later writers.

13. We now arrive at the *theory of exchange,* which is a deduction from the laws of utility.

If a person has any useful object, but an object belonging to another person would have greater utility, he will be glad to give the one in return for the other. But it is a necessary condition that the other person will likewise gain, or at least not lose by the exchange.

Whether the exchange will take place or not can only be ascertained by estimating the utility of the objects on either side, which is done by integrating the appropriate functions of utility up to the quantity of each object as limits. A balance of utility on both sides will lead to an exchange.

14. Suppose, however, that the useful objects on either side are commodities of which more or less may be given, and this even down to infinitely small quantities. Such is substantially the case in ordinary commercial sales. There are now no definite amounts of utility to be balanced against each other, but the one person will now give to the other so much of his commodity, and at such a ratio of exchange, that if he gave an infinitely small quantity, either more or less, but at the same rate, he would not gain in utility by it. The increments of utility lost and gained at the limits of the quantities exchanged must be equal, otherwise further exchange would take place.

The ratio of the increments of the commodities, however, would be indeterminate but for the existence of a law that all quantities of the same commodity, being uniform in kind, must be exchanged at the same rate. The last increments, then, must be exchanged, in the ratio of the whole quantities exchanged. To explain in ordinary words how the adjustment takes place under this condition is almost impossible. But light is at once thrown on the whole matter by stating that in every such exchange we have two *unknown quantities* and two equations by which to determine them. The *unknown* *quantities* are the quantities of commodity given and received. The known quantities are those of the commodities previously possessed. We have also the functions of utility of the commodities with the respect to the persons. An equation may thus be established on either side between the utility gained and sacrificed at the ratio of exchange of the whole commodities, upon the last increments exchanged.

15. When the useful object on one side only is infinitely divisible, we shall have only one unknown quantity, namely, that of the divisible commodity given for the indivisible object, and also one equation to determine it by, namely, that on the part of the person holding the divisible commodity, and able to give more or less for it. But this does not apply to unique objects, like a statue, a rare book, or gem, which do not admit of the conception of more or less.

When both commodities are indivisible as first supposed (section 13), we have neither unknown quantities nor equations.

16. The equations in an exchange may prove impossible, or without solutions. This will indicate either that no exchange of commodity can take place at all, or that at least one of the parties to the exchange is not satisfied even with the whole of the commodity formerly belonging to the other.

17. The principle of exchange thus deduced in the case of two persons and two commodities, applies to any number of persons and commodities. It, therefore, applies not only to the general inland trade of a country, but to the trade between aggregates of men or nations—international trade.

The number of equations is very rapidly increased according to the simple law of combinations.

18. Of course such equations as are here spoken of are merely theoretical. Such complicated laws as those of economy cannot be accurately traced in individual cases. Their operation can only be detected in aggregates and by the method of averages. *We must think under the forms of these laws in their theoretic perfection and complication; in practice we must be content with approximate and empirical laws.*

19. Let it be remarked, that though the exchanges be regulated by equations, there cannot be equality in the whole utilities gained and lost, which are found by integrating the functions of utility of the respective commodities before and after exchange. The balance is the gain of utility, and from the nature of exchange there must be a gain on one side at least.

20. Combining the theory of exchanges with that of labour and production, the quantity which each person produces will be dependant upon the result of the exchanges; for this may greatly modify the conditions of utility.

A new set of unknown quantities are thus introduced; but it will be found that just as many new equations to determine them may be established. Each such equation is between the utility of the last increment of produce and the increment of labour necessary to produce it.

21. The only further part of the theory which I will here at all attempt to explain is that referring to capital. I shall give a

definition of capital different from the established one, and much simpler. Mr. J. S. Mill says (*Principles*, 3rd edition, vol. i, p. 67), "What capital does for production is to afford the shelter, protection, tools and materials which the work requires, and to feed and otherwise maintain the labourers during the process."

To understand capital properly, we must omit all but the last enumerated part. Thus, I define capital as consisting of *all useful objects which, in supplying a labourer's ordinary wants and desires, enable him to undertake works of which the result will be deferred for a greater or less space of time.* Capital, in short, is nothing but *maintenance of labourers.*

It is, of course, perfectly true that buildings, tools, materials, &c., are a necessary means of production; but they are already the product of labour assisted by capital or maintenance. They are the results of the application of capital to labour at an imperfect stage.

Without capital a person must have immediate returns, or else he perishes. With capital he may sow in the spring that he may reap in the autumn; or he may undertake labour-saving enterprises, such as roads and railways, which will not make a full return for many years. Most improved modes of applying labour require that the enjoyment of the result shall be deferred.

22. While amount of capital is estimated by the amount of utility of which the enjoyment is deferred, *amount of employment of capital* is the amount of utility multiplied by the number of units of time during which its enjoyment is deferred.

23. The interest of all capital in a market is of one rate only, and that, therefore, the lowest rate; because capital consists only in maintenance, and may therefore be applied indifferently to any branch of industry. Buildings, tools, &c., which have hitherto been classed with capital, are, on the contrary, usually applicable only to the single purpose for which they were designed. The profit they bring, therefore, in no way follows the laws of the interest of capital, but rather those of rent, or the produce of natural agents. This has been already remarked by Professor Newman, in his *Lectures on Political Economy*, and by other writers.

24. As labour must be supposed to be aided with some capital, the rate of interest is always determined by the *ratio which a new increment of produce bears to the increment of capital by which it was produced.* As the interest of all capital must be uniform, the benefit which the mass of capital already available confers upon the labourer goes for nothing in determining the rate of interest, which depends solely upon the portion last added, or which may be added.

25. We can now easily explain the known fact, that the interest of capital always tends to fall very rapidly as its amount increases, in proportion to the labour it supports. It is because for equal increments of time the necessary increments of capital increase with the time. Thus, if I undertake a work which I can finish in one year, I have to await the result on an average only half a-year. If, however, I work a second year before getting the result, I wait a whole year for the former year's work and half a-year for the second year's work. Thus I employ at least three times as much capital in the second year as in the first. In the third year I should

employ at least five times as much capital, in the fourth year at least seven times, and so on. Unless, then, the advantages of the successive deferments increase in the arithmetical series 3, 5, 7, 9, &c., the proportional profit from the new additions must fall, and, as was said before, the lowest rate for which capital may be had governs the rate of all other capital.

26. It is the accepted opinion of writers of the present day, that the rate of interest tends to fall because the soil does not yield proportionate returns as its cultivation is pushed. But I must hold that this decrease in the proportionate returns would chiefly fall upon the wages of the labourer. The interest of capital has no relation to the absolute returns to labour, but only to the increased return which the last increment of capital allows.

27. Having thus explained some of the principal features of the theory, I shall close without venturing into the higher complications of the subject, where the effects of money, of credit, of combination of labour, of the risk or uncertainty of undertakings, and of bankruptcy, are taken into account.

The last result of the theory will be to give a determination of the rate of wages, or the produce of labour after deduction of rent, interest, profit, insurance and taxation, which are so many payments which the labourer makes for advantages enjoyed.

II.—*Statistics of Live Stock in the United Kingdom.*

The Statistical Department of the Board of Trade have recently published the first complete return of live stock in the United Kingdom of Great Britain and Ireland; the accounts heretofore obtained have related to the latter country only. Some of the most important items are set out in the subjoined tables:—

I.—*Total Number of Cattle, Sheep, and Pigs in each Division of the United Kingdom.*

Divisions of United Kingdom.	Date of Returns.	Number of Live Stock.				
		Cattle.			Sheep.*	Pigs.
		Cows.	Other Cattle.	Total.		
England	5th March, 1866	1,290,529	2,016,505	3,307,034	15,124,541	2,066,299
Wales	"	222,546	318,855	541,401	1,668,663	191,604
cotland	"	370,457	566,954	937,411	5,255,077	219,716
Ireland	Year 1865	1,386,176	2,107,238	3,493,414	3,688,742	1,299,893
le of Man	5th March, 1866	7,755	10,932	18,687	55,954	10,956
hannel Islands:—						
Jersey	"	5,815	6,222	12,037	517	6,332
Guernsey, &c.	"	3,030	3,946	6,976	1,214	5,599
otal for United Kingdom	—	3,286,308	5,030,652	8,316,960	25,794,708	3,800,399

* The number of sheep in these returns, so far as they relate to the northern counties of ngland and to Scotland, is probably short by a large number of the lambs of the present year in onsequence of the date at which the returns were made.

II.—*Number of each kind of Live Stock, and Number of Cattle Died of, or Killed on Account of Plague, in each County of Great Britain.*

Counties (Proper) in Great Britain.	Number of Live Stock Existing upon 5th March, 1866.			Estimated Ordinary Stock of Cattle.	Number of Cattle Died of, or Killed on Account of Plague, up to Week ended 21st April, 1866.	Percentage of Losses of Cattle from Plague up to 21st April, 1866, computed upon Estimated Ordinary Stock.
	Cattle.	Sheep.	Pigs.			
ENGLAND.						
Bedford	25,513	180,250	36,796	25,915	442	1·70
Berks	30,149	327,316	41,265	30,632	499	1·62
Buckingham	51,840	263,015	39,266	52,684	1,856	3·52
Cambridge	31,731	255,036	58,225	37,086	6,640	17·90
Chester	93,044	96,989	57,692	125,192	42,922	34·28
Cornwall	133,652	300,049	63,920	134,470	926	·69
Cumberland	109,225	396,021	40,742	112,377	5,370	4·78
Derby	113,195	176,122	31,452	113,569	1,029	·90
Devon	184,077	769,126	94,475	184,203	169	·09
Dorset	70,002	492,623	38,676	70,014	15	·02
Durham	52,322	146,696	14,140	52,695	406	·77
Essex (extra metropolitan)*	50,736	373,129	98,948	52,582	1,928	3·66
Gloucester	96,831	356,373	50,933	96,907	116	·12
Hants	48,690	619,598	79,789	48,976	299	·61
Hereford	65,184	257,196	25,260	65,717	548	·83
Hertford (extra metro.)*	20,830	206,858	32,194	20,166	486	2·29
Huntingdon	17,667	117,821	26,602	19,804	2,238	11·30
Kent (extra metropolitan)*	50,835	709,056	66,763	52,197	1,371	2·63
Lancaster	202,552	217,615	50,375	205,130	3,841	1·87
Leicester	89,115	290,554	23,250	89,355	333	·37
Lincoln	169,294	1,088,204	91,522	175,654	9,955	5·66
Monmouth	36,735	131,158	13,152	36,735	—	—
Norfolk	92,386	596,683	115,876	96,960	5,638	5·81
Northampton	74,262	435,837	38,366	76,358	2,476	3·24
Northumberland	78,431	635,487	24,621	79,319	919	1·16
Nottingham	67,165	245,532	29,083	68,386	2,308	3·37
Oxford	42,135	333,304	42,372	43,447	2,566	5·90
Rutland	11,651	75,755	3,754	11,669	19	·16
Salop	107,208	327,612	59,674	110,711	5,412	4·89
Somerset	173,547	636,975	75,469	173,659	178	·10
Stafford	107,298	231,936	47,967	109,806	3,585	3·26
Suffolk	75,767	407,929	133,498	57,359	2,022	3·52
Surrey (extra metropolitan)*	22,037	121,928	23,618	23,179	1,171	5·04
Sussex	74,670	485,056	42,642	75,734	1,066	1·40
Warwick	67,249	285,878	36,613	67,817	598	·88
Westmoreland	55,328	224,664	7,413	55,528	—	—
Wilts	77,724	596,822	61,012	77,823	99	·13
Worcester	45,789	204,154	36,686	45,909	197	·43
York, East Riding „ city of York	64,809	416,853	52,589	393,421	24,796	6·30
„ North Riding	119,233	462,038	53,472			
„ West „	189,341	500,196	72,048			
Total for counties of England	3,269,247	14,995,444	2,032,210	3,369,953	134,486	4·00
Total for metropolitan police district	37,787	129,097	34,089	44,483	7,028*	15·80
Total for England	3,307,034	15,124,541	2,066,299	3,414,436	141,514	4·14

* This total of 7,028 includes 6,908 for the "metropolitan police district" up to the 31st of March, and 120 for the "metropolis," or districts under the Board of Works, from 31st of March to 21st of April.

II.—*Number of each kind of Live Stock, and Number of Cattle Died or Killed, &c.—Contd.*

Counties (Proper) in Great Britain.	Number of Live Stock Existing upon 5th March, 1866.			Estimated Ordinary Stock of Cattle.	Number of Cattle Died of, or Killed on Account of Plague up to Week ended 21st April, 1866.	Percentage of Losses of Cattle from Plague up to 21st April, 1866, computed upon Estimated Ordinary Stock.
	Cattle.	Sheep.	Pigs.			
WALES.						
Anglesea	35,427	33,715	17,875	35,427	—	—
Brecon	29,604	212,515	7,367	29,604	—	—
Cardigan	47,384	198,546	16,708	47,384	—	—
Carmarthen	84,106	110,295	19,339	84,106	—	—
Carnarvon	44,072	139,317	18,940	44,072	—	—
Denbigh	46,695	150,565	26,529	49,994	3,552	7·16
Flint	19,383	35,106	14,860	21,917	3,186	14·54
Glamorgan	45,911	177,484	14,335	45,911	—	—
Merioneth	33,343	235,091	7,703	33,343	—	—
Montgomery	58,628	220,241	20,863	58,628	—	—
Pembroke	68,842	64,412	21,739	68,842	—	—
Radnor	28,006	181,376	5,346	28,006	—	—
Total for Wales	541,401	1,668,663	191,604	547,234	6,738	1·23
SCOTLAND.						
Aberdeen	133,451	109,292	14,763	133,798	358	·27
Argyle	57,831	700,621	5,702	57,831	—	—
Ayr	75,544	262,973	13,502	76,281	781	1·02
Banff	36,542	55,409	6,171	36,542	—	—
Berwick	15,192	193,288	8,344	15,429	237	1·54
Bute	8,252	34,318	1,250	8,252	—	—
Caithness	19,999	82,676	3,012	19,999	—	—
Clackmannan	2,104	9,468	1,261	2,361	275	11·64
Dumbarton	10,564	53,405	1,196	11,287	785	6·96
Dumfries	44,364	371,486	18,612	45,067	717	1·59
Edinburgh	13,013	113,479	9,609	14,088	1,077	7·64
Elgin or Moray	20,406	69,078	5,772	20,406	—	—
Fife	27,297	93,685	14,193	30,776	3,781	12·28
Forfar	28,645	156,653	14,868	37,501	9,452	25·20
Haddington	9,659	91,414	7,646	10,170	511	5·02
Inverness	45,334	522,006	4,588	45,335	1	—
Kincardine	21,529	41,073	4,769	22,734	1,691	7·44
Kinross	4,028	22,450	1,286	4,596	660	14·38
Kirkcudbright	34,658	271,467	10,289	34,692	34	·10
Lanark	56,206	160,014	8,992	60,539	4,484	7·40
Linlithgow	8,029	23,070	3,166	8,704	696	8·00
Nairn	5,232	19,862	1,406	5,232	—	—
Orkney and Shetland	43,308	76,624	7,313	43,308	—	—
Peebles	5,970	125,831	1,220	5,975	5	·08
Perth	66,150	494,635	17,782	69,944	4,342	6·21
Renfrew	21,513	26,503	2,354	21,968	519	2·36
Ross and Cromarty	36,109	293,754	8,489	36,109	—	—
Roxburgh	16,084	310,537	6,094	16,149	65	·40
Selkirk	2,027	100,885	663	2,042	15	·73
Stirling	21,396	86,392	3,673	23,891	2,705	11·32
Sutherland	11,262	164,060	1,458	11,262	—	—
Wigton	35,703	118,669	10,273	35,703	—	—
Total for Scotland	937,411	5,255,077	219,716	967,975	33,191	3·43

It appears from the same publication that there were on the 5th March, 1866, in England and Scotland 4,785,846 cattle, of which 1,883,532 were cows, 1,298,514 were "other cattle" aged two years and over; and 1,603,800 under two years of age; and that there were 22,048,281 sheep, of which 15,538,444 were one year old and above; and 6,509,837 under one year.

The next table exhibits the number of live stock in the United Kingdom and various foreign countries:—

III.—*Statement of the Population and Number of Live Stock in the under-mentioned Countries, according to the Latest Returns.*

Countries.	Date of Returns of Live Stock.	Population according to Latest Returns.	Cattle.			Sheep.	Pigs.
			Cows.	Other Cattle.	Total.		
United Kingdom	1865–66	29,070,932	3,286,308	5,030,652	8,316,960	25,795,708	3,802,399
Russia	'59–63	74,139,394	—	—	25,444,000	45,130,800	10,097,000
Denmark Proper	1861	1,662,734	756,834	361,940	1,118,774	1,751,950	300,928
Sleswig	'61	421,486	217,751	172,250	390,001	362,219	87,867
Holstein	'61	561,831	198,310	92,062	290,372	165,344	82,398
Sweden	'60	3,859,728	1,112,944	803,714	1,916,658	1,644,156	457,981
Prussia	'62	18,491,220	3,382,703	2,251,797	5,634,500	17,428,017	2,709,709
Hanover	'61	1,880,070	—	—	949,179	2,211,927	554,056
Saxony	'61	2,225,240	411,563	226,897	638,460	371,989	270,462
Wurtemberg	'61	1,720,708	466,758	490,414	957,172	683,842	216,965
Grand Duchy of Baden	'61	1,429,199	348,418	273,068	621,486	177,322	307,198
Grand Duchy of Hesse	'63	853,815	187,442	129,211	316,653	231,787	195,596
Grand Duchy of Nassau	'64	468,311	116,421	84,224	200,645	152,584	65,979
Grand Duchy of Mecklenburg-Schwerin	'57	539,258	197,622	69,215	266,837	1,198,450	157,522
Grand Duchy of Oldenburg	'52	279,637	—	—	219,843	295,322	87,336
Holland	'64	3,618,459	943,214	390,673	1,333,887	930,136	294,636
Belgium	'56	4,529,461	—	—	1,257,649	583,485	458,418
France	'62	37,386,313	5,781,465	8,415,895	14,197,360	33,281,592	5,246,403
Spain	'65	15,658,531	—	—	2,904,598	22,054,967	4,264,817
Austria	'63	36,267,648	6,353,086	7,904,030	14,257,116	16,964,236	8,151,608
Bavaria	'63	4,807,440	1,530,626	1,655,356	3,185,882	2,058,638	926,523
United States	'60	31,445,080	8,728,862	8,182,613	16,911,475	23,317,756	32,555,267

MARRIAGES, BIRTHS, AND DEATHS IN THE UNITED KINGDOM.

No. I.—ENGLAND AND WALES.

MARRIAGES IN THE QUARTER ENDED 31ST DECEMBER, 1865, AND BIRTHS AND DEATHS IN THE QUARTER ENDED 31ST MARCH, 1866.

England.—This Return comprises the BIRTHS and DEATHS registered by 2,200 registrars in all the districts of England during the winter quarter that ended on March 31st, 1866; and the MARRIAGES in 12,828 churches or chapels, about 5,352 registered places of worship unconnected with the Established Church, and 641 Superintendent Registrars' offices, in the quarter that ended on December 31st, 1865.

If a high marriage-rate is accepted as an indication of well-being and contentment in the great bulk of the people, the present return is highly satisfactory; for in the last quarter of last year the marriage-rate was unusually, perhaps unprecedentedly, high all over the country. The natural growth of the population, as shown by the birth-registers, has been active for a considerable time; and it was well maintained in the first three months of the present year. Against this latter fact must be set the high mortality which prevailed during the same period, partly in consequence of meteorological conditions and changes, unfavorable to health.

ENGLAND:—MARRIAGES, BIRTHS, *and* DEATHS, *returned in the Years* 1860-66, *and in the* QUARTERS *of those Years.*

Calendar YEARS, 1860-66:—*Numbers.*

Years.........	'66.	'65.	'64.	'63.	'62.	'61.	'60.
Marriages No.	—	185,520	180,387	173,510	164,030	163,706	170,156
Births........ ,,	—	747,870	740,275	727,417	712,684	696,406	684,048
Deaths........ ,,	—	491,360	495,531	473,837	436,566	435,114	422,721

QUARTERS *of each Calendar Year,* 1860-66.

(I.) MARRIAGES:—*Numbers.*

Qrs. ended last day of	'66.	'65.	'64.	'63.	'62.	'61.	'60.
March ....No.	—	36,835	37,988	35,528	33,953	33,274	35,150
June .... ,,	—	45,772	44,599	44,146	40,853	42,012	43,777
Septmbr..... ,,	—	45,863	44,675	41,932	40,600	39,884	40,541
Decmbr. .... ,,	—	57,050	53,125	51,904	48,624	48,536	50,688

QUARTERS *of each Calendar Year,* 1860–66.

(II.) BIRTHS:—*Numbers.*

Qrs. ended last day of	'66.	'65.	'64.	'63.	'62.	'61.	'60.
March ....No.	196,737	194,287	192,974	186,341	181,990	172,933	183,180
June .... ,,	—	192,921	188,835	189,340	185,554	184,820	174,028
Septmbr..... ,,	—	181,642	181,015	173,439	172,709	172,033	164,121
Decmbr. .... ,,	—	179,020	177,478	178,297	172,431	166,620	162,719

(III.) DEATHS:—*Numbers.*

Qrs. ended last day of	'66.	'65.	'64.	'63.	'62.	'61.	'60.
March ....No.	138,233	140,646	142,977	128,096	122,019	121,215	122,617
June .... ,,	—	116,006	116,801	118,121	107,392	107,558	110,869
Septmbr..... ,,	—	113,404	112,223	112,504	92,381	101,232	86,312
Decmbr. .... ,,	—	121,304	123,451	115,116	114,774	105,109	102,923

MARRIAGES.—In the quarter that ended 31st December, 1865, there were 114,100 persons married in England. In London the weddings rose from 7,856 and 8,711 in the December quarter of the two previous years to 9,746 in that of last year. In Lancashire and Cheshire, which together contain a population not much exceeding the metropolitan, the marriages in the same three periods were 7,635, 7,253, and 8,576. In the northern counties they were 2,917, 3,173, and 3,274. In Monmouthshire and Wales 3,329, 3,416, and 3,538. In Yorkshire 5,659, 6,027, and 6,291.

Taking a few districts as examples, the marriages in the three December quarters of 1863, 1864, and 1865, were in Kensington 505, 555, and 706. In Marylebone 478, 524, and 601. In Pancras 554, 643, and 668. In Islington 353, 422, and 525. In Hackney 258, 281, and 371. In Shoreditch 560, 607, and 600. In Bethnal-green 360, 420, and 520. In Lambeth 624, 669, and 799. The returns show continued prosperity in the seats of the woollen trade. In Bradford the marriages in the same three corresponding quarters were 633, 635, and 676. In Leeds they were 525, 517, and 604.

The marriage-rate *per annum*, in the December quarter of 1865, was 2·148. This result represents the proportion of persons married to a hundred in the population. The average of ten corresponding quarters was 1·981 per cent. Weddings are always the most frequent in the Christmas quarter, and in that of 1864 the marriage-rate was 2·022; but within the range of the comparison, viz., the ten years 1856-65, a rate as high as 2·1 per cent. is without any example, with the single exception of that which is supplied by the present return.

BIRTHS.—Of children born in the March quarter of the present year the number was 196,737, against the high number 194,287 in the corresponding period of 1865. The annual birth-rate for the same period was 3·776 per cent.; the average being 3·644. The birth-rate is always higher in the first six months of the year than in the last; but the tables for the last ten years furnish no instance of a rate so high as that which prevailed last quarter. London yielded its fair contribution to the increase; the births were under 30,000 in the metropolis, and slightly above that number in Cheshire and Lancashire. In some counties, as Oxfordshire, Buckinghamshire, Norfolk, and Leicestershire, there was a decrease, for which others, chiefly in the northern parts of the kingdom and in Wales, more than compensate by their increase. The births were very numerous in Surrey, Devonshire, Lancashire, Durham, Northumberland, Cumberland, and Wales.

ENGLAND:—*Annual Rates per Cent. of* PERSONS MARRIED, BIRTHS, *and* DEATHS, *during the* YEARS 1860-66, *and the* QUARTERS *of those Years.*

Calendar YEARS, 1860-66:—*General Percentage Results.*

YEARS	'66.	Mean '56-'65.	'65.	'64.	'63.	'62.	'61.	'60.
Estmtd. Popln. of England *in thousands* in middle of each Year....	21,210	—	20,991	20,772	20,554	20,336	20,119	19,903
Persons Married Per ct.	—	1·678	1·768	1·736	1·688	1·614	1·628	1·710
Births .... ,,	—	3·483	3·563	3·561	3·539	3·504	3·461	3·437
Deaths.... ,,	—	2·224	2·341	2·385	2·305	2·147	2·163	2·124

QUARTERS *of each Calendar Year,* 1860-66.

(I.) PERSONS MARRIED:—*Percentages.*

Qrs. ended last day of	'66.	Mean '56-'65.	'65.	'64.	'63.	'62.	'61.	'60.
March....Per ct.	—	1·398	1·428	1·472	1·408	1·360	1·346	1·422
June....... ,,	—	1·698	1·752	1·724	1·726	1·614	1·678	1·766
Septmbr. ,,	—	1·621	1·732	1·704	1·616	1·582	1·570	1·614
Decmbr. ,,	—	1·981	2·148	2·022	1·996	1·890	1·906	2·012

(II.) BIRTHS:—*Percentages.*

Qrs. ended last day of	'66.	Mean '56-'65.	'65.	'64.	'63.	'62.	'61.	'60.
March....Per ct.	3·776	3·644	3·768	3·740	3·691	3·644	3·500	3·707
June .... ,,	—	3·620	3·691	3·651	3·700	3·665	3·690	3·512
Septmbr. ,,	—	3·343	3·429	3·453	3·343	3·365	3·388	3·267
Decmbr. ,,	—	3·322	3·370	3·376	3·428	3·350	3·272	3·230

(III.) DEATHS:—*Percentages.*

Qrs. ended last day of	'66.	Mean '56-'65.	'65.	'64.	'63.	'62.	'61.	'60.
March....Per ct.	2·653	2·504	2·728	2·772	2·538	2·443	2·453	2·481
June........ ,,	—	2·186	2·220	2·260	2·308	2·121	2·147	2·237
Septmbr. ,,	—	2·002	2·141	2·141	2·169	1·800	1·994	1·718
Decmbr. ,,	—	2·205	2·284	2·349	2·213	2·230	2·064	2·043

INCREASE OF POPULATION.—Whilst the births were 196,737, the deaths were in the same time 138,233, and the excess of the former over the latter was 58,504. The natural increase was 650 daily; but this was disturbed by migratory tendencies, always in active operation.

The total number of emigrants from ports in England, Scotland, and Ireland was 39,672, of whom about 11,000 were of English origin. Irish emigration from the same ports was nearly double that amount. Of the total number 33,000 emigrants had chosen the United States for their destination, 6,000 the Australian Colonies. Of the 21,000 Irish emigrants, 19,000 went to the United States.*

Emigration declined greatly in the first quarter of 1865; but it has again increased, and was as active as in the two previous years 1863-64.

PRICES, PAUPERISM, AND THE WEATHER.—The price of wheat continues to rise, and in the first three months of this year it was 45*s.* 6*d.* per quarter, which is 5*s.* more than it was in the same period of 1864, and 7*s.* more than in that of 1865. During the four quarterly periods that have elapsed since the 31st March, 1865, it has been slowly but constantly rising; it was 40*s.* 6*d.*, 43*s.* 3*d.*, 44*s.* 10*d.*, and 45*s.* 6*d.* Beef at Leadenhall and Newgate Markets, sold by the carcase, averaged 5⅝*d.* per lb., a price which differed but little from those of the March quarter in 1864 and 1865, which were 5½*d.* and 5¾*d.* The price for inferior quality of beef was in all these three periods the same, viz., 4½*d.*; for superior it was 6½*d.* in 1864, 7*d.* in 1865, 6¾*d.* last quarter. The highest price of beef scarcely varied during the last eighteen months. The mean price of mutton was 6⅝*d.*, and was rather higher than in the two previous corresponding quarters. Best potatoes at the Waterside Market, Southwark, ranged from 55*s.* to 90*s.* per ton.

The average number of paupers relieved on the last day of each week in the quarter was 139,546 in-door, 759,402 out-door. The amount of in-door relief was the same as in the March quarter of 1864, but rather less than that of 1865. The number of out-door paupers was less than it had been in either of those periods.

According to the Greenwich observations the month of January was warmer than that month has been in any year since 1851. In ordinary course, January is almost 3° colder than December; but last January was as warm as the remarkably warm month that closed the year 1865. At the beginning of the month the weather was stormy, and the wind blew in gales; and on the 11th there was in London a fall of unusually heavy snow, which seriously impeded traffic and broke down the telegraphic poles and wires. Soon the snow disappeared under a rapid thaw, which was followed by the inundation of all the low-lying lands in the valley of the Thames. Heavy rains and high winds, with frequent changes, attended the month to its close; but its most striking feature was the high temperature, which continued till near the middle of February, and showed an average excess of 6° daily. From this date till the middle of March the air was almost continuously cold, and the average daily defect of temperature was about 3°. Four days of heat followed; then four days of cold; and finally a warm period of eight days, in which the mean temperature rose 6° above the average. The extreme mildness of the first six weeks quickened vegetation; hedges and fruit-trees budded, and in some places almost burst into blossom. The change in the atmosphere from mild and damp to cold and dry was favourable to agricultural operations, which had been in a backward state owing to the soddened state of the ground; and was besides a salutary check on the too rapid advance of vegetation; and at the end of the quarter the growing crops were sufficiently forward not to be injured by sudden frosts. The mean temperature of the air in the quarter was 41·2°, which is 1·7° above the average of the same period in the previous twenty-five years. The fall of rain was 9·3 in., which amount is 4·5 in. above the average.

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* Return with which the Registrar-General has been favoured by the Emigration Commissioners: of 39,672 emigrants the origin was undistinguished in 1,239 cases, which have been distributed by calculation.

Less than two inches of that quantity fell in March; the rest in nearly equal portions in the two previous months. The atmospheric pressure was low throughout the quarter. The reporter at Guernsey states that in January the island was visited by a succession of storms, evidently recurrent cyclones; the most violent of which occurred on the 11th, raged with extraordinary fury, and inflicted extensive injury on trees and houses. The barometer fell to 28·444 in., the greatest depression known there for 23 years. At Aldershot on the 11th, snow covered the ground to a depth of 9 in.; and about the middle of the month snowdrops, crocuses, and primroses were in flower. On the 4th February a hurricane of unprecedented violence blew at Belfast and for many miles around it, accompanied with thunder and lightning, and with hail and rain which swept along in masses. "Large trees were torn up; chimneys thrown down, and slates whirled through the air like feathers." This storm visited Manchester and some other places in the north of England.

DEATHS; AND THE STATE OF THE PUBLIC HEALTH.—The weather in the quarter, as it was observed in the metropolis, has been described in its main points; and the description of it is for the most part applicable to that which was experienced over the country. It was unfavourable to health; and, by exciting or aggravating pulmonary diseases, carried off many persons of advanced age. The total number of deaths in England and Wales was 138,238, which implies a rate of mortality above the average of ten previous winters, though not so high as it had been in the winters of 1864 and 1865. In those two periods 142,977 and 140,646 deaths were registered.

It deserves to be noticed, that while the mortality in London and eight other divisions was lower last quarter than in the corresponding period of 1865, it was higher in the two remaining divisions, viz., the north-western counties (Cheshire and Lancashire) and Yorkshire. It would appear that in the large and always unhealthy manufacturing towns in these parts, the people suffered more than they did in others from conditions and sudden changes of the atmosphere which were not confined to them; and also, as shown in the Registrars' reports, that scarlatina, measles, whooping-cough, and other zymotic diseases prevailed there, and co-operated with the weather in producing a high mortality.

Average Annual Rate of Mortality to 1,000 *of the Population in the Eleven Divisions of England in the Ten Years* 1851-60; *in the Year* 1865; *in the Winter, Spring, Summer, and Autumn Quarters of* 1865; *and in the Winter Quarter of* 1866.

Divisions.	Average Annual Rate of Mortality to 1,000 Living in						
	Ten Years, 1851-60.	1865.					1866.
		Year.	Winter Quarter.	Spring Quarter.	Summer Quarter.	Autumn Quarter.	Winter Quarter.
I. London	23·63	24·40	28·46	23·16	21·91	24·05	26·66
II. South-Eastern counties	19·55	20·40	24·25	18·82	19·07	19·44	21·85
III. South Midland "	20·44	21·56	25·39	20·02	20·02	20·79	22·85
IV. Eastern counties	20·58	21·06	24·47	20·40	19·75	19·60	23·19
V. South-Western counties	20·01	20·42	25·20	20·53	17·14	18·81	23·85
VI. West Midland "	22·35	22·18	27·15	20·23	19·46	21·89	26·54
VII. North Midland "	21·10	21·81	25·73	20·52	20·43	20·55	24·01
VIII. North-Western "	25·51	27·38	30·25	24·69	25·64	28·93	33·84
IX. Yorkshire	23·09	25·71	28·01	24·83	25·13	24·86	29·60
X. Northern counties	21·99	23·70	26·26	22·63	22·86	23·08	24·43
XI. Monmouthshire and Wales	21·28	23·36	29·51	24·75	18·74	20·41	23·92

The population of London is not very different in amount from that of Cheshire and Lancashire; the births were as 28 in the former to 30 in the latter; but the deaths were as 20 to 26.

The annual rate of mortality last quarter in England was 2·653 per cent.; the average of ten previous winters being 2·504. But it is a remarkable circumstance that this excess above the average was contributed entirely by the large towns; for in the country districts the death-rate, 2·252, was actually lower than the average, 2·295. The annual rate of mortality in the 142 town districts was 2·967, against the average, 2·680. These results confirm the conclusion that there were other destructive causes at work besides unfavourable states of the weather—that the diseases above mentioned, which commit so much havoc in towns, were still more extensively fatal, and only acquired additional vigour from influences peculiar to the season.

The death-rate was higher in Cheshire and Lancashire than in any other of the eleven divisions; it was 3·384 per cent. In Yorkshire it was 2·960; in London 2·666; in the west midland counties 2·654; in the northern counties (Durham, Northumberland, &c.) 2·443. It was lowest in the south-eastern counties, where it was 2·185.

ANNUAL RATE *of* MORTALITY *per Cent. in* TOWN *and* COUNTRY DISTRICTS *of* ENGLAND *in each Quarter of the Years* 1866-64.

	Area in Statute Acres.	Population Enumerated. 1861.	Quarters ending	Annual Rate of Mortality per Cent. in each Quarter of the Years 1866.	Mean '56-65.	1865.	1864.
In 142 Districts, and 56 Sub-districts, comprising the *Chief Towns*	3,287,151	10,930,841	March ..	2·967	2·680	2·881	2·980
			June	—	2·322	2·339	2·412
			Sept.	—	2·237	2·387	2·386
			Dec.	—	2·460	2·564	2·615
			Year	—	2·425	2·543	2·598
In the remaining Districts and Sub-districts of England and Wales, comprising chiefly *Small Towns* and *Country Parishes*	34,037,732	9,135,383	Year	—	1·989	2·080	2·107
			March ..	2·252	2·295	2·514	2·512
			June	—	2·024	2·049	2·070
			Sept.	—	1·736	1·828	1·833
			Dec.	—	1·901	1·927	2·014

Note.—The three months, January, February, March, contain 90, in leap year 91 days; the three months, April, May, June, 91 days; each of the last two quarters of the year 92 days. For this inequality a correction has been made in the calculations, also for the difference between 365 and 365·25 days, and 366 and 365·25 days in leap year.

If the map of England were shaded to represent the rates of mortality of last quarter in the registration districts, the eye travelling from the lighter south to the darker north would be instantly drawn to a spot of portentous darkness on the Mersey; and the question would be asked whether cholera, the black death, or other plague, imported with bales of merchandise, had been lately introduced into its busy and populous seaport. Happily this has not been the case; but fever, probably developed or aided by the mild and damp atmosphere of the season, and by overcrowding in an increasing population, has been busy and fatal in Liverpool, and in other towns of the same county, and of Yorkshire. The annual mortality of the borough of Liverpool in the three months was excessive, and demands immediate and earnest consideration; it rose to 4·598 per cent. This implies that if this death-rate were maintained for a year, forty-six persons out of a thousand in the population would die in that time, or fifteen more than died in Glasgow, its northern rival, nineteen more than in London. The mortality of the city of Manchester, though far less than that of Liverpool, was higher than in any other of the thirteen selected towns of the United Kingdom; it was 3·742 per cent., and that of Leeds was hardly less. The following numbers of deaths registered in a few districts in three corresponding quarters, make the recent increase sufficiently apparent:—

	March Quarter, 1864.	March Quarter, 1865.	March Quarter, 1866.
Liverpool	3,013	3,059	3,526
West Derby	2,136	2,047	2,628
Chorlton	1,393	1,196	1,506
Manchester	2,255	2,324	2,496
Ashton	779	836	1,006
Oldham	673	852	1,110
Blackburn	892	942	1,149
Leeds	1,088	961	1,234

The Registrar of the Howard-street sub-district of Liverpool reports 33 deaths from typhus out of 330 from all causes; and many occurred from bronchitis and whooping-cough. In the St. Thomas sub-district of the same town 28 were from typhus out of 311; and pulmonary diseases were fatal.

POPULATION; BIRTHS, DEATHS; MEAN TEMPERATURE *and* RAINFALL *in last Winter Quarter, in Thirteen Large Towns.*

Cities, &c.	Estimated Population in the Middle of the Year 1865.	Births in 13 Weeks ending 31st March, 1866.	Deaths in 13 Weeks ending 31st March, 1866.	Annual Rate to 1,000 Living during the 13 Weeks ending 31st March, 1866.		Mean Temperature in 13 Weeks ending 31st March, 1866.	Rainfall in Inches in 13 Weeks ending 31st March, 1866.
				Births.	Deaths.		
Total of 13 large towns	6,122,894	58,551	46,452	38·38	30·45	40·3	8·4
London	3,067,536	28,407	20,029	37·17	26·66	41·2	9·3
Bristol (city)	163,680	1,482	1,315	36·34	32·25	41·3	11·1
Birmingham (borough)	335,798	3,404	2,565	40·69	30·66	41·3	7·0
Liverpool (borough)	484,337	5,078	5,542	42·08	45·93	41·9	6·0
Manchester (city)	358,855	3,422	3,346	38·27	37·42	40·6	8·5
Salford (borough)	112,904	1,101	936	39·14	33·27	40·1	8·5
Sheffield (borough)	218,257	2,212	1,818	40·68	33·43	39·6	8·2
Leeds (borough)	228,187	2,535	2,095	44·59	36·85	40·3	6·5
Hull (borough)	105,233	1,072	730	40·89	27·84	—	—
Newcastle - on - Tyne (borough)	122,277	1,299	962	42·64	31·58	38·9	3·5
Edinburgh (city)	175,128	1,555	1,313	35·64	30·09	38·4	8·6
Glasgow (city)	432,265	4,678	3,378	43·44	31·37	38·6	15·6
Dublin (city and some suburbs)	318,437	2,806	2,423	29·07	30·54	41·8	7·6

ENGLAND: — MARRIAGES *Registered in Quarters ended* 31*st December*, 1865-63; *and* BIRTHS *and* DEATHS *in Quarters ended* 31*st March*, 1866-64.

1	2	3	4	5	6
DIVISIONS. (England and Wales.)	AREA in Statute Acres.	POPULATION, 1861. (*Persons.*)	MARRIAGES in Quarters ended 31st December.		
			'65.	'64.	'63.
		No.	No.	No.	No.
ENGLD. & WALES....*Totals*	37,324,883	20,066,224	57,050	53,125	51,904
I. London	77,997	2,803,989	9,746	8,711	7,856
II. South-Eastern	4,065,935	1,847,661	4,930	4,625	4,604
III. South-Midland	3,201,290	1,295,515	3,310	3,252	3,215
IV. Eastern	3,214,099	1,142,562	3,135	3,148	3,088
V. South-Western	4,993,660	1,835,714	3,960	3,868	3,813
VI. West Midland	3,865,332	2,436,568	6,981	6,568	6,634
VII. North Midland	3,540,797	1,288,928	3,309	3,084	3,154
VIII. North-Western	2,000,227	2,935,540	8,576	7,253	7,635
IX. Yorkshire	3,654,636	2,015,541	6,291	6,027	5,659
X. Northern	3,492,322	1,151,372	3,274	3,178	2,917
XI. Monmthsh. & Wales	5,218,588	1,312,834	3,538	3,416	3,329

7	8	9	10	11	12	13
DIVISIONS. (England and Wales.)	BIRTHS in Quarters ended 31st March.			DEATHS in Quarters ended 31st March.		
	'66.	'65.	'64.	'66.	'65.	'64.
	No.	No.	No.	No.	No.	No.
ENGLD. & WALES ...*Totals*	196,737	194,287	192,947	138,233	140,646	142,977
I. London	28,407	28,059	26,597	20,029	21,018	22,721
II. South-Eastern	16,982	16,912	16,715	10,585	11,600	11,573
III. South Midland	11,880	11,900	11,993	7,473	8,265	8,735
IV. Eastern	10,109	10,252	10,483	6,614	6,960	7,044
V. South-Western	15,987	15,872	16,026	10,891	11,483	11,965
VI. West Midland	24,777	24,103	24,857	16,995	17,156	17,428
VII. North Midland	11,894	11,855	11,838	7,850	8,365	8,460
VIII. North-Western	30,429	29,982	29,989	26,539	23,330	23,826
IX. Yorkshire	20,862	20,748	20,444	15,584	14,571	14,713
X. Northern	12,908	12,449	12,099	7,542	7,966	7,615
XI. Monmthsh. & Wales	12,502	12,155	11,906	8,131	9,932	8,897

REMARKS ON THE WEATHER

DURING THE QUARTER ENDING 31ST MARCH, 1866.

By JAMES GLAISHER, ESQ., F.R.S., *&c., Sec. of the British Meteorological Society.*

The weather at the beginning of the year was stormy, with gales of wind. The temperature was high for the season. On the 11th day there fell an unusual fall of sticking snow, of very great specific gravity. The street traffic in London was extremely difficult; the telegraphic wires were so loaded with snow, and the wind was so violent, that many poles gave way, and telegraphic communication all round London was greatly interrupted. So great was the destruction of wires and poles, that at the end of the quarter all were not restored. The snow was of that unusual dense character, that six inches in depth produced water to the depth of 1¼ in. nearly. A very rapid thaw set in, and within two or three days all the snow disappeared, followed, however, by rivers overflowing their banks. All the low-lying lands along the valley of the Thames were under water. The weather continued changeable throughout January, with heavy rains and gales of wind. The characteristic feature of this month was its extraordinary warmth, it being 6½° above its average value from fifty years' observation. This unusual temperature continued till 12th February, and the average daily excess of temperature up to this time was 6° daily. From the 13th day of February till 15th March, the weather was cold, and nearly constantly below the average for the season of the year. The average daily defect of temperature for this period was 2°·9; four days of warm weather followed, each day being about 2° in excess of its average temperature. This was succeeded by four days of very cold weather, the defect averaging 4½° daily, and the quarter closed with eight days whose temperature exceeded their averages by 6°.

The extreme mild weather in January and the first part of February stimulated vegetation to a very unusual activity at this season. Hedges and early fruit trees were budding, and some were ready to burst into blossom.

The change in the middle of February, from so mild and damp to a colder and dryer atmosphere, prevented vegetation advancing too rapidly, and was otherwise beneficial to agricultural operations, by enabling farmers to do much field and farm work, which in many places, owing to the soddened state of the ground, were in a very backward state.

At the end of the quarter vegetation was sufficiently checked by the cold weather, and the growing crops generally were sufficiently advanced to render them secure from the danger of sudden frosts.

The mean temperature of January was 42°·6, being warmer than any January since that of 1851; the preceding month, December, was 42°·7, being 2°·4 of higher temperature than the average; usually January is 2°·8 colder than the preceding month, yet on this occasion it was 0°·1 of lower temperature only. It was 4½° above the average of the preceding 25 Januaries, and 6°·3 above the temperature of January, 1865.

The mean temperature of February was 40°·5, being 1°·9 above the average of the preceding 25 Februaries, and 3°·9 above that of last year. Every month from September to this month inclusive has been of higher temperature than their averages, to the mean amount of 3°·9 nearly.

The mean temperature of March was 40°·5, the same as in February, being

1°·2 below the average of the preceding 25 years, and 3°·9 above that of last year.

The mean high day temperatures were above their averages in January and February to the amounts of 4°·7 and 2°·3 respectively, and below in March to the amount of 1°·9.

The mean low night temperatures were above their averages in January and February to the amounts of 3°·3 and 1°·2 respectively, and below in March to the amount of 0°·8.

Therefore in January and February both the days and nights were warm, whilst in March both were cold.

The daily ranges of temperature were greater than their averages in January and February to the amounts of 1°·4 and 1°·1 respectively, and less in March to the amount of 0°·8.

The fall of rain exceeded its average value in both January and February, in the former by 2 inches, and in the latter by 2½ inches; it was of its average value in March.

The mean temperature of the air at Greenwich in the three months ending February, constituting the three winter months, was 41°·8, being 4°·0 above the average of the preceding 95 years.

1866. Months.	Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
	Air.			Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames				
	Mean.	Diff. from Average of 95 Years.	Diff. from Average of 25 Years.	Mean.	Diff. from Average of 25 Years.	Mean.	Diff. from Average of 25 Years.	Mean.	Diff. from Average of 25 Years.		Mean.	Diff. from Average of 25 Years.	Mean.	Diff. from Average of 25 Years.
	°	°	°	°	°	°	°	°	°	°	In.	In.	Gr.	Gr.
Jan.	42·6	+6·4	+4·5	40·7	+3·8	38·4	+3·4	11·1	+1·4	42·1	·234	+·032	2·7	+0·3
Feb.	40·5	+2·2	+1·9	38·5	+1·5	35·9	+1·3	12·4	+1·1	40·5	·211	+·009	2·4	0·0
March ...	40·5	−0·5	−1·2	38·0	−1·4	34·8	−1·7	13·9	−0·8	41·7	·202	−·015	2·3	−0·2
Mean......	41·2	+2·7	+1·7	39·1	+1·3	36·4	+1·0	12·5	+0·6	41·4	·216	+·009	2·5	0·0

1866. Months.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal Movement of the Air.	Reading of Thermometer on Grass.				
										Number of Nights it was			Lowest Reading at Night.	Highest Reading at Night
	Mean.	Diff. from Average of 25 Years.	Mean.	Diff. from Average of 25 Years.	Mean.	Diff. from Average of 25 Years.	Amnt.	Diff. from Average of 51 Years.		At or below 30°.	Between 30° and 40°.	Above 40°.		
			In.	In.	Gr.	Gr.	In.	In.	Miles.				°	°
Jan.	86	− 2	29·701	−·056	548	− 6	3·7	+2·0	361	10	15	6	20·4	44·2
Feb.	85	0	29·529	−·269	547	− 7	4·0	+2·5	337	13	13	2	17·3	42·8
March ...	81	− 1	29·527	−·229	547	− 3	1·6	0·0	239	16	11	4	16·2	49·6
Mean......	84	− 1	29·586	−·185	547	− 5	Sum 9·3	Sum +4·5	Mean 312	Sum 39	Sum 39	Sum 12	Lowest 16·2	Highest 49·6

Note.—In reading this table it will be borne in mind that the sign (−) minus signifies below the average, and that the sign (+) plus signifies above the average.

ENGLAND:—*Meteorological Table, Quarter ended* 31*st March*, 1866.

1 NAMES OF STATIONS.	2 Mean Pressure of Dry Air reduced to the Level of the Sea.	3 Highest Reading of the Thermometer.	4 Lowest Reading of the Thermometer.	5 Range of Temperature in the Quarter.	6 Mean Monthly Range of Temperature.	7 Mean Daily Range of Temperature.	8 *Mean Temperature of the Air.*	9 Mean Degree of Humidity.
	in.	°	°	°	°	°	°	
Guernsey	29·525	55·5	32·5	23·0	20·8	7·3	44·4	89
Ventnor	29·560	59·0	30·0	29·0	25·0	8·4	44·4	79
Barnstaple	29·504	60·5	19·0	41·5	31·2	10·6	43·5	86
Royal Observatory	29·551	64·0	22·5	41·5	35·0	12·4	41·2	84
Royston	29·549	63·7	16·2	47·5	36·6	12·3	40·6	87
Lampeter	29·538	60·0	19·0	41·0	32·3	12·0	40·8	87
Diss (Norfolk)	29·522	62·0	17·0	45·0	38·8	14·0	41·1	83
Belvoir	29·486	64·0	10·5	53·5	37·8	14·5	39·5	86
Liverpool	29·504	59·3	27·3	32·0	26·7	7·5	41·9	82
Wakefield	29·473	59·3	19·0	40·3	36·9	13·4	40·3	85
Stonyhurst	29·428	54·9	14·5	40·4	35·5	11·0	39·0	87
North Shields	29·464	57·2	20·4	36·8	31·2	9·6	38·6	86

10	11	12	13	14	15	16	17	18
	WIND.						RAIN.	
NAMES OF STATIONS.	Mean estimated Strength.	Relative Proportion of				Mean Amount of Cloud.	Number of Days on which it fell.	Amount collected.
		N.	E.	S.	W.			
								in.
Guernsey	1·7	7	4	8	11	4·2	64	16·2
Ventnor	—	7	4	5	14	—	54	11·0
Barnstaple	1·3	6	3	8	13	4·6	61	13·7
Royal Observatory	0·7	6	3	8	13	7·6	50	9·3
Royston	—	6	1	10	13	6·5	63	7·0
Lampeter	1·1	5	4	10	11	7·4	67	18·9
Diss (Norfolk)	1·3	4	3	13	10	6·6	—	7·8
Belvoir	1·8	5	2	11	12	6·3	56	5·3
Liverpool	1·6	5	4	9	12	6·6	54	6·0
Wakefield	1·9	4	4	9	13	7·0	61	6·5
Stonyhurst	0·8	6	3	8	13	7·5	69	14·0
North Shields	1·8	8	3	7	12	5·9	65	6·8

No. II.—SCOTLAND.

MARRIAGES, BIRTHS, AND DEATHS IN THE QUARTER ENDED 31ST MARCH, 1866.

Scotland, for the purposes of registration, is at present divided into 1,014 districts; and this return comprises the BIRTHS, DEATHS, and MARRIAGES registered in these districts (with the single exception of the inaccessible island of St. Kilda), during the quarter ending the 31st March, 1866. From these it would appear that the births and marriages have been considerably above the average of the corresponding quarter of the ten previous years, while the deaths have been slightly under the average.

BIRTHS.—28,876 births were registered in Scotland during the quarter ending the 31st March, 1866, being the annual proportion of 366 births in every 10,000 persons of the estimated population. This is greatly above the average birth-rate of the first quarter of the ten previous years, which was only at the rate of 347 births in every 10,000 persons. It can scarcely be doubted that this is greatly due to the much higher proportion of marriages which has occurred among the population during the last three years. The births in England and Wales show a similar increase, apparently due to the same cause. Thus 196,737 births were registered in England and Wales during the quarter ending 31st March, 1866, giving an annual proportion of 377 births in every 10,000 persons of the estimated population; the average of the quarter during the ten previous years being only 364 births in a like population.

The town and rural districts exhibited the usual difference in the proportion of their births. Thus, in the 126 town districts (which embrace the towns with populations of 2,000 persons and upwards), 16,853 births were registered; while in the 888 rural districts (embracing the remainder of the population of Scotland), only 12,023 births occurred; thus indicating an annual proportion of 399 births in every 10,000 persons in the town districts, but only 328 births in a like population in the rural districts.

TABLE I.—*Proportion of Illegitimate in every Hundred Births in the Divisions and Counties of Scotland, during the Quarter ending* 31*st March*, 1866.

Divisions.	Per Cent. of Illegitimate.	Counties.	Per Cent. of Illegitimate.	Counties.	Per Cent. of Illegitimate.	Counties.	Per Cent. of Illegitimate.
SCOTLAND	10·8						
Northern	6·5	Shetland	3·7	Forfar	12·2	Lanark	9·5
		Orkney	7·8	Perth	10·9	Linlithgow .	8·3
North-Western	6·9	Caithness	8·3	Fife	9·4	Edinburgh .	9·8
North-Eastern	17·7	Sutherland....	3·9	Kinross	8·0	Haddington	6·1
		Ross and Cromarty	6·5	Clackmannan	6·8	Berwick	12·9
East Midland ..	10·9					Peebles	7·7
West Midland.	9·2	Inverness	7·3	Stirling	9·1	Selkirk	9·8
		Nairn	16·1	Dumbarton ..	7·3	Roxburgh ..	12·4
South-Western	9·6	Elgin	19·1	Argyll	10·7	Dumfries	18·2
South-Eastern.	9·5	Banff	17·7	Bute	11·3	Kirkcudbright ..	11·8
		Aberdeen	18·1	Renfrew	8·8		
Southern	15·1	Kincardine....	13·5	Ayr................	10·8	Wigtown	16·4

Of the 28,876 children born during the quarter, 25,746 were legitimate, and 3,130 illegitimate; thus showing that 10·8 per cent. of the births were illegitimate, or one illegitimate in every 9·2 births. The proportion of illegitimate births was, as usual, lowest in the town and highest in the rural districts, only 10·3 per cent. of the births being illegitimate in the towns, but 11·4 in the rural districts. This is a proportion far from creditable to our rural population, considering that the illegitimate births among the rural population of France only average 4½ per cent. of the births. Table I exhibits the proportion of illegitimate births in the several divisions and counties of Scotland, and generally accords with the previous returns, the counties embraced in the north-eastern and southern divisions of Scotland showing, as they have always done, the highest proportion of illegitimate births.

Of the children born during the quarter, 14,854 were males, and 14,022 females, being in the proportion of 106 males at birth for every 100 females. 9,791 births were registered during January, 8,944 during February, and 10,141 during March; being at the rate of 316 births daily during January, 319 daily during February, and 327 daily during March.

DEATHS.—19,075 deaths were registered in Scotland during the first quarter of 1866, being in the annual proportion of 242 deaths in every 10,000 persons of the estimated population. This is a death-rate slightly below the average of the quarter during the ten previous years, which was at the rate of 244 deaths in every 10,000 persons. The deaths in England and Wales, however, during the same period, have been above their usual proportion. Thus, 138,283 deaths were registered in England and Wales during the first quarter of 1866, giving the proportion of 265 deaths in every 10,000 persons; the quarter's average of the ten previous years being 250 deaths in a like population.

TABLE II.—*Number of Births, Deaths, and Marriages in Scotland, and in the Town and Country Districts during the Quarter ending* 31*st March*, 1866, *and their Proportion to the Population; also the Number of Illegitimate Births, and their Proportion to the Total Births.*

	Population.		Total Births.			Illegitimate Births.		
	Census, 1861.	Estimated, 1866.	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every
SCOTLAND	3,062,294	3,153,413	28,876	3·66	27	3,130	10·8	9·2
126 town districts	1,603,875	1,688,288	16,853	3·99	25	1,749	10·3	9·6
888 rural ,,	1,458,419	1,465,125	12,023	3·28	30	1,381	11·4	8·7

	Population.		Deaths.			Marriages.		
	Census, 1861.	Estimated, 1866.	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every
SCOTLAND	3,062,294	3,153,413	19,075	2·42	41	5,627	0·71	140
126 town districts	1,603,875	1,688,288	11,992	2·84	35	3,583	0·85	117
888 rural ,,	1,458,419	1,465,125	7,083	1·93	51	2,044	0·55	179

The deaths in the town districts, as usual, greatly exceeded those in the rural districts. Thus, in the 126 town districts, 11,992 deaths were registered, but only 7,083 in the rural districts; indicating an annual death-rate of 284 deaths in every 10,000 persons in the town districts, but only 198 deaths in a like population in the rural districts.

Of the deaths, 6,348 were registered in January, 5,756 in February, and 6,971 in March; being at the rate of 205 deaths daily during January and February, but 225 deaths daily during March.

INCREASE OF THE POPULATION.—As the births numbered 28,876 during the quarter, and the deaths 19,075, the natural increase of the population by births was 9,801. From that number ought to be deducted all the Scottish emigrants. From a return furnished to the Registrar-General by the Emigration Commissioners, it appears that 39,672 persons emigrated from the ports of Great Britain and Ireland, during the quarter ending the 31st March, 1866, of whom 10,735 were English, 1,610 Scotch, 20,672 Irish, 5,416 foreigners, while of 1,239 the nativity was not ascertained. If 52 persons be allowed as the proportion of those whose origin was not distinguished, the total Scottish emigrants during the quarter would amount to 1,662; which number, deducted from the excess of births over deaths, would leave 8,139 as the increase of the population during the quarter, making no allowance for the large emigration to England, nor for the drafts to the army, navy, &c.

MARRIAGES.—5,627 marriages were registered in Scotland during the first quarter of 1866, being in the annual proportion of 71 marriages in every 10,000 persons, or 1 marriage in every 140 persons. This is very much above the average proportion of marriages for the quarter, which for the ten previous years was only at the rate of 63 marriages in every 10,000 persons. The proportion of marriages has been steadily increasing for a period of now three years, and this fact of itself speaks well for the general prosperity of the country. This increase in the number and proportion of the marriages is now telling on the proportion of births; and as the number of emigrants from Scotland is nearly in the same proportion diminishing, these facts prove that Scotland was never in a more prosperous condition than at the present moment, and that all are finding a better market for their labour than they have done for a great many years.

As might be expected, the town districts exhibited much the highest proportion of marriages. Thus, in the 126 town districts, 3,583 marriages were registered, but only 2,044 in the 888 rural districts; indicating an annual marriage-rate of 85 marriages in every 10,000 persons in the town districts, but only 55 marriages in a like population in the rural districts.

HEALTH OF THE POPULATION.—The mild weather which prevailed during the first half of the quarter had a most beneficial effect on the health of the population, and caused both less sickness and fewer deaths than is usual at that season. The colder and more wintry weather, however, which prevailed during the latter half of February and nearly the whole of March, largely increased the sickness, and still more largely augmented the deaths. All the epidemics experienced this increasing prevalence and mortality during the cold wintry weather; but so did all other diseases, and notably those of the respiratory organs. Many aged persons also died during the prevalence of the cold frosty weather, without apparent disease. Typhoid (*i.e.*, enteric and gastro-enteric) and typhus fevers, which assumed the epidemic form in October, 1863, and have prevailed over Scotland more or less ever since, though very prevalent during the quarter, seemed to be now dying out with the advent of the milder weather; and they will drop their epidemic character as spring advances, if they follow the course of previous epidemics of fever. Among the young, hooping-cough has been especially prevalent in some of the northern and north-eastern counties. Scarlatina, though met with everywhere, has been especially prevalent in Aberdeenshire, while measles has especially prevailed in Fifeshire. Diphtheria seems still to be extending its ravages, and to be on the increase. Diarrhœa has been more than usually prevalent, and in some few instances seemed even to put on the epidemic form. With cholera prevailing in

France, Germany, and Holland, this fact should be taken as a warning, that the choleraic atmosphere, or whatever else it be which induces that disease, is approaching us, and may be expected to manifest itself among us as the heat of the sun becomes more powerful.

Table III.—*Number of Births, Deaths, and Marriages in Scotland, and their Proportion to the Population, Estimated to the Middle of each Year, during each Quarter of the Years* 1866 *to* 1862 *inclusive.*

	1866.		1865.		1864.		1863.		1862.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
1st Quarter—										
Births	28,876	3·66	28,608	3·65	28,177	3·61	26,729	3·44	27,089	3·51
Deaths........	19,075	2·42	20,786	2·65	22,576	2·89	19,227	2·47	19,420	2·51
Marriages ..	5,627	0·71	5,407	0·69	5,333	0·68	5,090	0·65	4,763	0·62
Mean Temperature	38°·0		35°·3		35°·7		40°·9		38°·8	
2nd Quarter—										
Births	—	—	30,332	3·86	29,992	3·84	29,651	3·82	28,728	3·73
Deaths........	—	—	17,066	2·17	18,445	2·36	17,947	2·31	17,385	2·25
Marriages ..	—	—	5,698	0·72	5,710	0·73	5,557	0·71	5,185	0·67
Mean Temperature	—		51°·5		49°·9		49°·0		49°·4	
3rd Quarter—										
Births	—	—	27,320	3·48	27,068	3·47	26,362	3·40	25,783	3·34
Deaths........	—	—	15,907	2·02	16,131	2·06	16,249	2·09	14,235	1·84
Marriages ..	—	—	5,335	0·68	4,993	0·64	4,863	0·62	4,570	0·59
Mean Temperature	—		57°·5		54°·5		53°·9		54°·4	
4th Quarter—										
Births	—	—	26,866	3·42	27,218	3·49	26,583	3·42	25,469	3·30
Deaths........	—	—	17,062	2·17	17,151	2·19	17,998	2·32	16,155	2·09
Marriages ..	—	—	7,137	0·91	6,639	0·85	6,577	0·84	6,079	0·78
Mean Temperature	—		43°·4		42°·0		43°·6		42°·0	
Year— Population.	—		3,136,057		3,118,701		3,101,345		3,083,989	
Births	—	—	113,126	3·60	112,445	3·60	109,825	3·52	107,069	3·47
Deaths........	—	—	70,821	2·25	74,303	2·38	71,421	2·30	67,195	2·17
Marriages ..	—	—	23,577	0·75	22,675	0·72	22,087	0·71	20,597	0·66

Weather.—With the exception of a few days in January, the weather was unusually mild from the beginning of the year till the middle of February; but from the 13th of February till the 20th of March occurred the only truly wintry weather we have had during the winter of 1865-66.

SCOTLAND:—MARRIAGES, BIRTHS, *and* DEATHS *Registered in the Quarter ended* 31*st March*, 1866.

1 DIVISIONS. (Scotland)	2 AREA in Statute Acres.	3 POPULATION, 1861. (*Persons.*)	4 Marriages.	5 Births.	6 Deaths.
		No.	No.	No.	No.
SCOTLAND .... *Totals*	19,639,377	3,062,294	5,627	28,876	19,075
I. Northern	2,261,622	130,422	200	733	594
II. North-Western........	4,739,876	167,329	312	1,183	803
III. North-Eastern	2,429,594	366,783	541	3,210	2,014
IV. East Midland	2,790,492	523,822	977	4,429	3,145
V. West Midland	2,693,176	242,507	329	2,100	1,317
VI. South-Western........	1,462,397	1,008,253	2,269	11,588	7,474
VII. South-Eastern	1,192,524	408,962	726	3,903	2,615
VIII. Southern	2,069,696	214,216	273	1,730	1,113

No. III.—IRELAND.

MARRIAGES IN THE QUARTER ENDED 31ST DECEMBER, 1865; AND BIRTHS AND DEATHS IN THE QUARTER ENDED 31ST MARCH, 1866.

This return includes the MARRIAGES *registered* during October, November, and December, 1865; and the BIRTHS and DEATHS *registered* during January, February, and March, 1866, in the 720 Registrars' districts of Ireland. The districts are co-extensive with the Dispensary districts of the 163 Poor Law Unions; which latter form the districts of the Superintendent Registrars.

MARRIAGES.—The number of marriages *registered* in Ireland during the last quarter of 1865 was 6,960, being 608 in excess of the number *registered* during the corresponding quarter of 1864.

The marriages *registered* during the year 1865, amounted to 30,684, being equal to 1 marriage in every 184, or ·544 per cent. of the *estimated* population; the number *registered* in 1864 was 27,373.

Of the 30,684 marriages *registered* during 1865, 21,685 were between Roman Catholics, representing a ratio of only 1 marriage in every 208, or ·481 per cent. of the Roman Catholic population. The number of these marriages *registered* does not, however, represent the number solemnized, as in many cases the Registrars state that they have been unable to obtain the necessary certificate required by the provisions of the "Registration of Marriages (*Ireland*) Act, 1863," 26 and 27 Vic., cap. 90, sec. 11, to be sent to the Registrar.

The number of marriages *registered* in 1865, under the 7 and 8 Vic., cap. 81, amounted to 8,999, being equal to 1 in every 143, or ·698 per cent. of the Protestant population.

BIRTHS.—The births *registered* during the quarter ending on 31st March last, amounted to 40,088 (20,643 boys and 19,445 girls), being equal to an annual ratio of 1 in every 34·7, or 2·88 per cent. of the *estimated* population; the number of births registered during the corresponding quarter of 1865 was 38,325, and in the first quarter of 1864 the number was 30,330.

The births registered during the quarter in the following unions or superintendent registrars' districts represent the highest ratios:—Castletown (co. Cork), 1 in 21; Belfast, 1 in 22; Dunmanway, 1 in 25; Claremorris, Bantry, Clonakilty, Dingle, and Kenmare, each 1 in 26; Macroom, 1 in 27; Cahersiveen, Skull, and Tralee, each 1 in 28; Newport (co. Mayo), Swineford, Kilmacthomas, and Killarney, each 1 in 29.

Of the foregoing sixteen unions or superintendent registrars' districts which had the highest birth-rates during the quarter, as many as eleven belong to the "South-western" division, in which appears the highest birth-rate since registration commenced in Ireland (1st January, 1864).

In the undermentioned ten unions or superintendent registrars' districts the number of births *registered* during the quarter afforded very low annual ratios, viz.—Donegal, Mountmellick, Trim, Tuam, and Tullamore, each 1 in 50; Ballyshannon, 1 in 52; Borrisokane, 1 in 53; Delvin, 1 in 59; *Ballyvaghan*, 1 *in* 68; *and Donaghmore*, 1 *in* 77.

DEATHS.—The number of deaths registered in Ireland during the quarter amounted to 27,824 (13,684 males and 14,140 females), representing an annual ratio of 1 in every 50·1, or 2·00 per cent. of the *estimated* population. The number *registered* in the corresponding quarter of 1865 was 29,341, and in 1864 it was 28,540.

According to the number of deaths *registered* the rate of mortality during the quarter ending 31st March last was highest in the following unions or superintendent registrars' districts:—Belfast, 1 in 27; Cork, 1 in 36; Clonmel, Enniscorthy, and Wexford, each 1 in 37; Carrick-on-Suir, 1 in 38; and Newtownards, 1 in 39. In the metropolitan unions or superintendent registrars' districts of Dublin North and Dublin South the ratios were 1 in 32 and 1 in 36 respectively.

In the following unions or superintendent registrars' districts the deaths *registered* during the quarter represent *very low ratios*, viz.:—*Scarriff*, 1 *in* 91; *Castlebar and Killadysert, each* 1 *in* 92; *Ballyvaghan*, 1 *in* 100; *Letterkenny*, 1 *in* 101; *Tuam*, 1 *in* 107; *and Croom*, 1 *in* 110.

EMIGRATION.—According to the returns obtained by the Enumerators, the number of emigrants who left the ports of Ireland, during the quarter ended 31st March last, amounted to 25,889—16,734 males and 9,155 females—being 10,041 more than the number who emigrated during the corresponding quarter of 1865.

Emigration from Ireland during the Months of January, February, and March in 1865 *and* 1866.

Months.	Number of Emigrants in						Increase or Decrease in 1866 compared with 1865.			
	1865.			1866.			Increase.			Decrease.
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Females.
January ..	1,608	1,266	2,874	2,896	1,566	4,462	1,288	300	1,588	—
February	2,675	2,314	4,989	4,380	2,274	6,654	1,705	—	1,665	40
March	4,371	3,614	7,985	9,458	5,315	14,773	5,087	1,701	6,788	—
Total (1st qr.)...	8,654	7,194	15,848	16,734	9,155	25,889	8,080	1,961	10,041	—

The *average* number of emigrants from Ireland *during the first three months* of the years 1852 to 1865 was 21,745; the number for the past quarter is, therefore, 4,144 in excess of the average.

ESTIMATED DECREASE OF THE POPULATION.—The number of births *registered* during the quarter ended 31st March last being 40,088; the deaths 27,824; and the number of emigrants 25,889 (according to the returns obtained by the enumerators at the several seaports);—a decrease of 13,625 would therefore appear to have taken place in the population during that period.

PRICES OF PROVISIONS AND PAUPERISM.—The average price of Messrs. Manders and Co.'s 4-lb. loaf, for the first quarter of the present year, was 6½*d*., being one penny higher than the average price for the corresponding period of 1865. The price during the first three weeks of the first quarter of 1866 was 7*d*.; it was 6½*d*. during the remaining weeks. The price was 5½*d*. during the whole of the corresponding quarter of 1865.

The price of oatmeal at the Dublin Corn Exchange ranged from 15*s*. 6*d*. in the first week to 14*s*. 6*d*. per cwt. in the last week of the first quarter of the present year; the average price for the three months being 14*s*. 10*d*., against 11*s*. 9*d*. for the corresponding quarter of last year.

The quotations for potatoes at the Potato Market, Dublin, were somewhat lower for the first quarter of 1866 than for the corresponding period of 1865; the averages for the former being 2*s*. 6*d*. to 3*s*. 6*d*., and for the latter 3*s*. 1*d*. to 3*s*. 7*d*. per cwt.

The average prices of beef at the Dublin Cattle Market were also lower during the first quarter of the present year than during the first three months of 1865; the averages being 50*s*. 6*d*. to 63*s*. 6*d*. per cwt. for the former, and 54*s*. 6*d*. to 68*s*. for the latter.

The average number of persons in Ireland receiving in-door relief on Saturdays during the quarter was 57,123; the average for the corresponding quarter of last year was 62,418. The smallest number of persons (54,894) receiving in-door relief was on Saturday, in the first week of January; this was also the case in the corresponding quarter of 1865 and of 1864. The largest number receiving in-door relief during the past quarter was in the first and second weeks of March. The number of persons (10,163) receiving out-door relief was also smallest in the first week of the quarter; the weekly average for the quarter was 11,927, against 11,296 in the corresponding period of 1865.

Of the persons receiving in-door relief during the first quarter of the present year an average number of 465 in each week were located in asylums for the blind and the deaf and dumb, and in extern hospitals; in the corresponding quarter of 1865 the average weekly number was 523.

THE WEATHER.—The following meteorological observations, taken at the Ordnance Survey Office, Phœnix Park, Dublin, during the first quarter of the years 1864, 1865, and 1866, respectively, have been obligingly furnished by Captain Wilkinson, R.E., by direction of the Superintendent of the Ordnance Survey.

The mean height of the barometer during the first quarter of the present year was 29·521 inches (in the corresponding period of 1865 and of 1864 it was 29·651 inches, and 29·725 inches respectively); the highest reading (30·490 inches) was on the 24th January, at 9·30 A.M., wind S.W.; and the lowest (28·480 inches) on the 23rd March, at 9·30 P.M., wind S.E.

The mean temperature of the air during the quarter was 41·5° (during the corresponding period of 1865 it was 38·9°, and in 1864 it was 40·2°); the maximum registered by the thermometer (68·0°) was on the 30th March, and the minimum (17·5°) was on the 1st of the same month.

Rain or snow fell on 54 days during the quarter. The rain-fall measured 7·508 inches (it was 5·979 inches and 5·227 inches respectively during the corresponding quarters of 1865 and 1864). The greatest monthly rain-fall during the first quarter of 1866, was in March, when 3·309 inches were registered.

The wind blew on 47 days from S.W.; 13 days from N.W.; 7 days from W.; 6 days from S.E.; and 5 days from N.E., at 9·30 A.M.; on only one day during the three months did the wind blow from the East at that hour, and on only two days from the North. It was calm on 4 days at 9·30 A.M.

Meteorological Observations taken at the Ordnance Survey Office, Phœnix Park, Dublin.

Months.	Barometer.			Thermometer.			Rain-fall.
	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	
	Inches.	Inches.	Inches.	°	°	°	Inches.
January, 1864	30·404	29·338	29·910	52·8	14·8	40·1	1·438
" '65	30·154	28·357	29·462	51·7	20·4	35·8	1·690
" '66	30·490	28·808	29·575	55·2	27·5	42·6	2·262
February, 1864	30·386	29·011	29·755	57·6	19·5	37·7	·971
" '65	30·423	28·639	29·697	53·5	25·0	40·4	2·788
" '66	30·274	28·830	29·469	55·8	24·8	40·6	1·937
March, 1864	30·064	28·742	29·509	58·7	26·8	42·7	2·818
" '65	30·190	29·115	29·793	60·9	25·5	40·4	1·501
" '66	30·395	28·480	29·518	68·0	17·5	41·2	3·309
							Total.
Mean of 1st qr., 1864	30·285	29·030	29·725	56·4	20·4	40·2	5·227
" '65	30·256	28·704	29·651	55·4	23·6	38·9	5·979
" '66	30·386	28·706	29·521	59·7	23·3	41·5	7·508

Months.	Direction of the Wind at 9·30 A.M. Number of Days on which the Wind blew from the								Calm at 9·30 A.M.
	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	
January, 1864	—	—	2	7	5	10	5	—	2
" '65	1	1	1	2	8	9	11	1	2
" '66	—	—	—	1	3	22	2	2	1
February, 1864	2	2	6	2	—	8	3	4	2
" '65	1	3	7	—	1	5	11	—	—
" '66	1	1	—	1	—	17	3	4	1
March, 1864	2	4	10	1	—	7	5	2	—
" '65	8	1	2	4	1	1	12	1	1
" '66	1	4	1	4	2	8	2	7	2
Total, 1st qr., 1864....	4	6	18	10	5	25	13	6	4
" '65....	10	5	10	6	5	15	34	2	3
" '66....	2	5	1	6	5	47	7	13	4

HEALTH OF THE PEOPLE.—The deaths registered during the past quarter were far below the number registered during the corresponding periods of the years 1864 and 1865.

Zymotic diseases, in general, have proved less fatal than during the preceding periods; in some districts, however, especially those in which precautionary measures have been neglected, fever, scarlatina, measles, &c., have proved most destructive.

The registrar of the Randalstown district, superintendent registrars' district of Antrim, says, "I have had twenty-one cases of fever, while there have been registered during the same period 7 deaths from it. The disease, I am sorry to say, has been on the increase for the last month, owing chiefly to my not having compulsory power to send such cases to the workhouse fever hospital. I saw to-day six fever cases in one cabin, and the head of the family refused to have them removed to hospital. *I should mention that the guardians have a spring cart and bed for the conveyance of fever patients to hospital.*"

It would be well that the good example set by the Antrim board of guardians was more generally followed, as there can be no doubt that the poison of fever and other zymotic diseases is disseminated in consequence of fever patients being transmitted to hospital in cabs and other public conveyances.

In Belfast No. 4 District 49 deaths resulted from fever.

Scarlatina of a malignant character prevailed in the Keady district, Armagh union; five healthy children in one family were cut off by this scourge. In the Bellaghy district, Magherafelt union, scarlatina and its sequelæ proved fatal in 21 instances. In Mullingar district 27 deaths resulted from scarlatina. "This great mortality" (observes the registrar) "I attribute to the filthy and unclean state of the back streets in this town." In Ennistimon scarlatina was very prevalent, but comparatively mild; this disease was also rife in Wexford, Galway, Westport; and of the 60 deaths registered in the Achill district (Newport union), 21 were ascribed to scarlatina. This disease, however, had disappeared from many districts where it had been epidemic. Measles and whooping cough were very prevalent. In Coleraine there were 9 deaths from small-pox; in Arklow (Rathdrum union), out of 78 deaths registered during the quarter, no less than 35 were caused by small pox! Deaths from this disease also occurred in the districts of Cappaghduff (Ballinrobe union), Ballymoney, &c. *It is much to be regretted that the registrars of those districts in which fatal cases of small-pox were registered, were unable to state whether those who fell victims to this disease had been previously vaccinated.*

Bronchitis and other pulmonary affections proved very fatal, especially to the aged and the very young. The registrar of the Portadown district (Lurgan union), records a case of "pure Asiatic" cholera which proved fatal in fifteen hours. Two deaths "from cholera" were registered in the Newtownards district.

While some of the registrars are enabled to report favourably of the sanitary state of their districts, the majority complain loudly of the want of all sanitary precautions, especially the Registrars of Portrush, Bellaghy (Magherafelt union), Ardara (Glenties union), Kilskeer (Kells union), Mullingar, and Carrick-on-Suir. The registrar of the last-named district, who has repeatedly reported on the unsatisfactory state of the locality, from a deficient sewerage, overcrowding, &c., remarks that "the state of the sewers and lodging-houses continues the same."

Those who fail to adopt such precautionary measures, as have been over and over again recommended with a view to the improvement of the public health, now that cholera is at our doors, may see, when it is too late, the dire results of their negligence.

The Order of the Eight Divisions as regards the Annual Rate represented by the Number of Marriages Registered during the Fourth Quarter of the Year 1865, *is shown in the following Statement.*

Divisions.	Quarter ending 31st Dec., 1865. Ratio to Population.	Divisions.	Quarter ending 31st Dec., 1865. Ratio to Population.
1. North-Eastern	1 in 129	5. North Midland	1 in 258
2. Eastern	„ 157	6. South Midland	„ 269
3. North-Western	„ 229	7. South-Western	„ 291
4. South-Eastern................	„ 241	8. Western	„ 377

The Numerical Order of the Eight Divisions as regards the Annual Rate represented by the Number of Births Registered during the First Quarter of 1866, *is shown in the following Statement.*

Divisions.	Quarter ending 31st March. Ratio.	Divisions.	Quarter ending 31st March. Ratio.
1. South-Western	1 in 31	5. Eastern	1 in 38
2. North-Eastern	„ 33	6. North-Western	„ 38
3. Western	„ 36	7. North Midland	„ 40
4. South-Eastern	„ 38	8. South Midland	„ 43

The following Statement shows the Eight Divisions, Arranged according to the Annual Rate of Mortality afforded by the Number of Deaths Registered during the First Quarter of 1866.

Divisions.	Quarter ending 31st March. Ratio.	Divisions.	Quarter ending 31st March. Ratio.
1. Eastern	1 in 42	5. South Midland	1 in 56
2. North-Eastern	„ 46	6. North-Western	„ 61
3. South-Eastern	„ 47	7. North Midland	„ 61
4. South-Western	„ 53	8. Western	„ 67

Divisions.	Area in Statute Acres.	Population in 1861.	December Quarter, 1865. — Marriages.	March Quarter, 1866.	
				Births.	Deaths.
I. North-Eastern	2,328,305	1,124,041	2,176	8,430	6,111
II. North-Western....	2,392,501	574,745	628	3,739	2,370
III. Eastern	1,993,016	829,569	1,318	5,424	4,916
IV. North Midland....	2,019,408	575,289	558	3,575	2,340
V. South Midland	2,361,709	515,272	479	2,988	2,297
VI. Western	4,088,459	822,878	546	5,719	3,090
VII. South-Eastern	1,826,172	500,957	519	3,338	2,671
VIII. South-Western	3,313,071	855,818	736	6,875	4,029
Total of Ireland....	20,322,641	5,798,967	6,960	40,088	27,824

No. IV.—GREAT BRITAIN AND IRELAND.

SUMMARY *of* MARRIAGES, *in the Quarter ended* 31*st December*, 1865; *and* BIRTHS *and* DEATHS, *in the Quarter ended* 31*st March*, 1866.

COUNTRIES.	AREA in Statute Acres.	POPULATION, 1861. (*Persons.*)	Marriages.	Births.	Deaths.
		No.	No.	No.	No.
England and Wales	37,324,883	20,066,224	57,050	196,737	138,233
Scotland	19,639,377	3,062,294	7,137	28,876	19,075
Ireland	20,322,641	5,798,967	6,960	40,088	4,029
GREAT BRITAIN AND IRELAND	77,286,901	28,927,485	71,147	265,701	161,337

ade of United Kingdom, 1865-64-63.—*Distribution of* Exports *from United Kingdom, according to the Declared Real Value of the Exports; and the Computed Real Value* (*Ex-duty*) *of* Imports *at Port of Entry, and therefore including Freight and Importer's Profit.*

Merchandise (*excluding Gold and Silver*), Imported from, and Exported to, the following Foreign Countries, &c. [000's omitted.]	Whole Years. 1865. Imports from	1865. *Exports to*	1864. Imports from	1864. *Exports to*	1863. Imports from	1863. *Exports to*
I.—Foreign Countries:	£	£	£	£	£	£
Northern Europe; viz., Russia, Sweden, Norway, Denmark & Iceland, & Heligoland	26,337,	5,911,	22,354,	5,649,	19,312,	4,871,
Central Europe; viz., Prussia, Germany, the Hanse Towns, Holland, and Belgium	35,429,	28,763,	32,416,	24,485,	27,426,	21,702,
Western Europe; viz., France, Portugal (with Azores, Madeira, &c.), and Spain (with Gibraltar and Canaries)	39,652,	14,818,	34,326,	14,927,	31,837,	15,972,
Southern Europe; viz., Italy, Austrian Empire, Greece, Ionian Islands, and Malta	4,827,	7,921,	4,120,	8,207,	4,568,	8,303,
Levant; viz., Turkey, with Wallachia and Moldavia, Syria and Palestine, and Egypt	27,619,	13,137,	25,908,	13,538,	22,553,	11,298,
Northern Africa; viz., Tripoli, Tunis, Algeria and Morocco	509,	385,	415,	176,	542,	191,
Western Africa	1,347,	642,	1,064,	571,	1,412,	655,
Eastern Africa; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Mooria Islands	122,	124,	73,	115,	37,	75,
Indian Seas, Siam, Sumatra, Java, Philippines; other Islands	1,363,	1,911,	1,070,	1,577,	1,598,	1,228,
South Sea Islands	27,	36,	18,	185,	20,	141,
China, including **Hong Kong**	12,062,	6,692,	17,098,	5,334,	15,479,	4,032,
United States of America	21,549,	21,236,	17,924,	16,704,	19,571,	15,352,
Mexico and Central America	3,911,	2,036,	3,557,	2,060,	2,780,	1,819,
Foreign West Indies and Hayti	5,533,	3,366,	6,767,	4,369,	4,857,	3,487,
South America (Northern), New Granada, Venezuela, and Ecuador	1,837,	2,789,	1,892,	2,518,	867,	1,969,
" **(Pacific)**, Peru, Bolivia, Chili, and Patagonia	7,952,	2,798,	5,898,	3,030,	6,113,	2,461,
" **(Atlantic)** Brazil, Uruguay, and Buenos Ayres	9,068,	8,432,	9,302,	9,010,	6,954,	5,831,
Whale Fisheries; Grnlnd., Davis, Straits, Southn. Whale Fishery, & Falkland Islands	154,	9,	95,	15,	89,	12,
Total—Foreign Countries	199,298,	121,006,	184,297,	112,470,	166,015,	99,399,
II.—British Possessions:						
British India, Ceylon, and Singapore	43,272,	20,383,	57,520,	21,909,	53,966,	22,558,
Austral. Cols.—New South Wales and Victoria	7,102,	9,316,	6,854,	8,060,	4,648,	8,756,
" " So. Aus., W. Aus., Tasm., and N. Zealand	3,181,	4,037,	3,185,	3,799,	2,513,	3,749,
British North America	6,350,	4,705,	6,851,	5,611,	8,166,	4,819,
" W. Indies with Btsh. Guiana & Honduras	7,372,	2,909,	11,450,	4,325,	8,910,	3,928,
Cape and Natal	2,446,	1,700,	1,976,	2,278,	1,920,	1,524,
Brt. W. Co. of Af., Ascension and St. Helena	450,	457,	306,	814,	208,	369,
Mauritius	1,246,	597,	1,589,	659,	1,986,	522,
Channel Islands	418,	752,	836,	1,016,	648,	866,
Total—British Possessions	71,837,	44,856,	90,567,	47,966,	82,965,	47,091,
General Total £	271,135,	165,862,	274,864,	160,436,	248,980,	146,490,

IMPORTS. — (United Kingdom.) — First Two Months (*January — February,* 1866-65-64-63-62.—*Computed Real Value* (*Ex-duty*), *at Port of Entry* (*and therefore including Freight and Importer's Profit*), *of Articles of Foreign and Colonial Merchandise Imported into the United Kingdom.*

(Whole Years.) [000's omitted.] FOREIGN ARTICLES IMPORTED.		1866.	1865.	1864.	1863.	1862.
		£	£	£	£	£
RAW MATLS.—*Textile.*	Cotton Wool	10,055,	7,057,	6,060,	3,532,	1,206,
	Wool (Sheep's) ..	691,	728,	534	578,	510,
	Silk	2,606,	2,283,	1,635,	2,190,	2,034,
	Flax	342,	324,	810,	387,	366,
	Hemp	254,	139,	209,	110,	60,
	Indigo	174,	211,	94,	223,	179,
		14,122,	10,742,	9,342,	7,020,	4,355,
„ „ *Various.*	Hides	197,	198,	169,	162,	182,
	Oils	469,	341,	293,	378,	339,
	Metals	442,	377,	492,	411,	525,
	Tallow	135,	155,	176,	77,	145,
	Timber................	588,	703,	973,	556,	498,
		1,831,	1,774,	2,103,	1,584,	1,689,
„ „ *Agrcltl.*	Guano	47,	218,	109,	141,	54,
	Seeds	425,	458,	553,	233,	242,
		472,	676,	662,	374,	296,
TROPICAL, &c., PRODUCE.	Tea	1,117,	681,	1,201,	2,120,	1,639,
	Coffee	211,	233,	271,	350,	284,
	Sugar & Molasses	1,443,	993,	935,	1,357,	1,153,
	Tobacco	304,	282,	263,	314,	154,
	Rice	80,	56,	85,	100,	46,
	Fruits	50,	81,	62,	40,	82,
	Wines	628,	465,	708,	595,	448,
	Spirits	247,	203,	331,	345,	241,
		4,080,	2,994,	3,856,	5,221,	4,047,
FOOD	Grain and Meal.	4,340,	1,509,	3,263,	3,957,	5,274,
	Provisions	981,	1,016,	987,	565,	658,
		5,321,	2,525,	4,200,	4,522,	5,932,
Remainder of Enumerated Articles		632,	579,	572,	512,	408,
TOTAL ENUMERATED IMPORTS		26,458,	19,290,	20,735,	19,233,	16,727,
Add for UNENUMERATED IMPORTS (say)		6,614,	4,822,	5,183,	4,808,	4,182,
TOTAL IMPORTS		33,072,	24,112,	25,918,	24,041,	20,909,

EXPORTS.—(United Kingdom.)—First Three Months (*January—March*), 1866-65-64-63-62.—*Declared Real Value, at Port of Shipment, of Articles of* British *and* Irish *Produce and Manufactures Exported from United Kingdom.*

(First Three Months.) [000's omitted.] British Produce, &c., Exported.		1866.	1865.	1864.	1863.	1862.
		£	£	£	£	£
Manfrs.—*Textile.*	Cotton Manufactures ..	15,241,	10,947,	10,465,	6,312,	7,530,
	" Yarn	3,769,	1,708,	2,103,	1,143,	1,389,
	Woollen Manufactures	5,820,	4,047,	4,718,	3,209,	2,985,
	" Yarn	1,329,	935,	1,073,	984,	669,
	Silk Manufactures........	402,	296,	387,	443,	473,
	" Yarn	76,	60,	55,	84,	78,
	Linen Manufactures	2,717,	2,084,	1,998,	1,455,	1,088,
	" Yarn	630,	515,	653,	493,	403,
		29,984,	20,592,	21,452,	14,123,	14,615,
" *Sewed.*	Apparel	617,	536,	554,	526,	422,
	Haberdy. and Mllnry.	1,459,	1,002,	1,252,	860,	673,
		2,076,	1,538,	1,806,	1,386,	1,095,
Metals	Hardware	1,037,	892,	842,	680,	566,
	Machinery....................	968,	1,296,	924,	838,	718,
	Iron	3,121,	2,899,	2,982,	2,536,	2,049,
	Copper and Brass........	559,	913,	697,	784,	596,
	Lead and Tin	834,	576,	709,	610,	586,
	Coals and Culm	1,022,	905,	903,	765,	782,
		7,541,	6,981,	7,057,	6,178,	5,297,
Ceramic Manufcts.	Earthenware and Glass	562,	524,	490,	435,	357,
Indigenous Mnfrs.	Beer and Ale................	585,	595,	474,	456,	402,
	Butter	86,	56,	69,	108,	54,
	Cheese	39,	22,	41,	31,	25,
	Candles	54,	28,	32,	54,	47,
	Salt	65,	33,	48,	52,	58,
	Spirits	31,	69,	161,	114,	58,
	Soda	383,	228,	209,	198,	186,
		1,243,	1,031,	1,034,	1,013,	830,
Various Manufcts.	Books, Printed	139,	98,	100,	89,	88,
	Furniture	60,	91,	47,	64,	45,
	Leather Manufactures	534,	614,	525,	456,	585,
	Soap	43,	44,	53,	59,	53,
	Plate and Watches	86,	97,	98,	114,	94,
	Stationery	89,	95,	75,	59,	57,
		951,	1,039,	898,	842,	917,
Remainder of Enumerated Articles		2,557,	2,200,	2,212,	1,771,	1,663,
Unenumerated Articles.........		2,077,	1,730,	1,718,	1,813,	1,649,
	Total Exports....................	46,991,	35,635,	36,667,	27,561,	26,423,

SHIPPING.—FOREIGN TRADE.—(United Kingdom.)—First Three Months (*January—March*), 1866-65-64-63.—*Vessels Entered and Cleared with Cargoes, including repeated Voyages, but excluding Government Transports.*

(First Three Months.)	1866.			1865.		1864.		1863.	
ENTERED:—	Vessels.	Tonnage (000's omitted.)	Average Tonnage.	Vessels.	Tonnage (000's omitted.)	Vessels.	Tonnage (000's omitted.)	Vessels.	Tonnage (000's omitted.)
Vessels belonging to—	No.	Tons.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Russia	71	28,	394	63	27,	75	31,	43	16,
Sweden	110	23,	209	56	10,	135	24,	112	22,
Norway	555	128,	231	491	106,	515	113,	427	100,
Denmark	300	34,	113	227	24,	617	61,	479	47,
Prussia and Ger. Sts.	489	146,	299	358	102,	452	121,	496	140,
Holland and Belgium	504	67,	132	367	50,	461	56,	406	53,
France	794	79,	99	640	57,	700	57,	760	64,
Spain and Portugal	77	24,	312	83	27,	78	22,	87	26,
Italy & other Eupn. Sts.	263	86,	327	153	47,	112	36,	135	40,
United States	123	123,	1,000	60	67,	111	124,	209	217,
All other States	3	1,	333	10	4,	2	1,	5	2,
	3,289	739,	225	2,508	521,	3,258	646,	3,159	728,
United Kingdm. & Depds.	5,422	1,861,	343	4,398	1,401,	4,522	1,417,	4,544	1,392,
Totals Entered	8,711	2,600,	298	6,906	1,922,	77,80	2,063,	7,703	2,120,
CLEARED:—									
Russia	104	42,	404	112	49,	112	46,	82	31,
Sweden	112	32,	286	73	19,	119	25,	86	23,
Norway	287	72,	251	266	67,	380	94,	236	55,
Denmark	261	36,	138	347	41,	553	58,	432	46,
Prussia and Ger. Sts.	657	168,	256	576	148,	425	123,	687	163,
Holland and Belgium	413	70,	169	385	56,	351	53,	369	52,
France	925	109,	118	894	98,	1,118	115,	1,010	101,
Spain and Portugal	79	24,	304	82	28,	74	23,	77	26,
Italy & other Eupn. Sts.	272	90,	333	253	82,	224	72,	190	60,
United States	137	140,	1,021	67	61,	97	102,	177	178,
All other States	6	8,	500	9	3,	3	1,	6	2,
	3,253	786,	242	3,064	652,	3,456	712,	3,352	737,
United Kingdm. & Depds.	6,287	2,183,	347	5,688	1,879,	5,971	1,882,	5,966	1,723,
Totals Cleared	9,540	2,969,	311	8,752	2,531,	9,427	2,594,	9,318	2,460,

GOLD AND SILVER BULLION AND SPECIE.—IMPORTED AND EXPORTED.—(United Kingdom.)—*Computed Real Value for the* First Three Months (*January—March*), 1866-65-64.

[000's omitted.]

(First Three Months.)	1866.		1865.		1864.	
	Gold.	*Silver.*	Gold.	*Silver.*	Gold.	*Silver.*
Imported from:—	£	£	£	£	£	£
Australia	1,309,	1,	533,	—	669,	—
So. Amca. and W. Indies	407,	1,137,	772,	1,375,	1,533,	2,195,
United States and Cal.	353,	318,	988,	21,	1,632,	23,
	2,069,	1,456,	2,293,	1,396,	3,834,	2,218,
France	28,	177,	17,	307,	57,	464,
Hanse Towns, Holl. & Belg.	147,	523,	4,	29,	80,	891,
Prtgl., Spain, and Gbrltr.	136,	24,	249,	16,	14,	31,
Mlta., Trky., and Egypt	1,	2,	44,	—	6,	—
China	—	—	—	—	—	—
West Coast of Africa	29,	6,	28,	6,	29,	—
All other Countries....	16,	5,	25,	16,	89,	35,
Totals Imported....	2,426,	2,193,	3,651,	1,770,	4,109,	3,639,
Exported to:—						
France	944,	377,	881,	184,	1,726,	658,
Hanse Towns, Holl. & Belg.	44,	26,	2,	348,	86,	236,
Prtgl., Spain, and Gbrltr.	—	—	363,	—	489,	6,
	988,	403,	1,246,	532,	2,251,	900,
Ind. and China (viâ Egypt)................	255,	1,973,	115,	934,	835,	2,536,
Danish West Indies	—	—	—	—	—	—
United States	—	—	—	—	6,	5,
South Africa	—	—	—	—	—	—
Mauritius	—	—	—	—	—	—
Brazil	121,	27,	3,	26,	536,	36,
All other Countries....	32,	40,	106,	22,	184,	34,
Totals Exported....	1,396,	2,443,	1,470,	1,514,	3,812,	3,511,
Excess of *Imports*	1,030,	—	2,181,	256,	297,	128,
" Exports	—	250,	—	—	—	—

REVENUE.—(UNITED KINGDOM.)—31ST MARCH, 1866-65-64-63.

Net Produce in YEARS *and* QUARTERS *ended* 31*st* MARCH, 1866-65-64-63.

[000's omitted.]

QUARTERS, ended 31st March.	1866.	1865.	1866.		Corresponding Quarters.	
			Less.	More.	1864.	1863.
	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
Customs	5,139,	5,570,	431,	—	5,538,	5,722,
Excise	5,481,	5,342,	—	,139,	5,127,	4,665,
Stamps	2,425,	2,501,	76,	—	2,439,	2,374,
Taxes	384,	398,	14,	—	367,	357,
Post Office	1,005,	1,005,	—	—	965,	955,
	14,434,	14,816,	521,	,139,	14,431,	14,073,
Property Tax	1,914,	3,127,	1,213,	—	3,168,	3,890,
	16,348,	17,943,	1,734,	,139,	17,549,	17,963,
Crown Lands	90,	84,	—	6,	81,	79,
Miscellaneous	1,355,	1,150,	—	,205,	1,309,	1,171,
Totals	17,793,	19,177,	1,734,	,350,	18,989,	19,213,
			NET DECR. £1,384,186			

YEARS, ended 31st March.	1866.	1865.	1866.		Corresponding Years.	
			Less.	More.	1864.	1863.
	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
Customs	21,276,	22,572,	1,296,	—	23,232,	24,034,
Excise	19,788,	19,558,	—	,230,	18,207,	17,155,
Stamps	9,560,	9,530,	—	,30,	9,317,	8,994,
Taxes	3,350,	3,292,	—	,58,	3,218,	3,150,
Post Office	4,250,	4,100,	—	,150,	3,810,	3,650,
	58,224,	59,052,	1,296,	,468,	57,784,	56,983,
Property Tax	6,390,	7,958,	1,568,	—	9,084,	10,567,
	64,614,	67,010,	2,864,	,468,	66,868,	67,550,
Crown Lands	320,	310,	—	10,	305,	300,
Miscellaneous	2,878,	2,993,	115,	—	3,035,	2,753,
Totals	67,812,	70,313,	2,979,	,478,	70,208,	70,603,
			NET DECR. £2,501,144			

Note.—In the corresponding table of the last number of this *Journal*, p. 186, a falling off in the revenue from the Property Tax was, by a clerical error, ascribed to the Post Office; and the increase from the latter department improperly attributed to the Property Tax. This error affects both the quarterly and yearly account as given on the page in question.

REVENUE.—UNITED KINGDOM.—QUARTER ENDED 31ST MARCH, 1866:—
APPLICATION.

An Account showing the* REVENUE *and other* RECEIPTS *of the* QUARTER *ended* 31*st March*, 1866; *the* APPLICATION *of the same, and the Charge of the Consolidated Fund for the said Quarter, together with the Surplus or Deficiency upon such Charge.

Received:—

		£
Surplus Balance beyond the Charge of the *Consolidated Fund* for the Quarter ended 31st December, 1865, viz.:—		
Great Britain	—	
Ireland	£910,724	
		910,724
Income received, as shown in Account I		17,792,165
Amount raised on account of Fortifications, &c., per Act 27th and 28th of Victoria, cap. 109		100,000
Amount raised by the issue of Exchequer Bonds, per Act 28th and 29th of Victoria, cap. 29		1,000,000
Amount received in repayment of Advances for Public Works, &c.		311,020
Ditto, for New Courts of Justice		40,000
		£20,154,709
Balance, being the Deficiency on 31st March, 1866, upon the charge of the Consolidated Fund in Great Britain, to meet the Dividends and other charges payable in the Quarter to 30th June, 1866, and for which Exchequer Bills (Deficiency) will be issued in that Quarter		2,132,764
		£22,287,473

Paid:—

		£
Amount applied out of the Income in Redemption of Deficiency Bills issued in the Quarter to 31st March, 1866, for the charge of the Consolidated Fund in Great Britain on 31st December, 1865, viz.:—		
Total deficiency	£2,573,604	
Deduct amount redeemed with Sinking Fund	220,000	
		2,353,604
Amount applied out of the Income to *Supply Services*		10,021,739
„ advanced for New Courts of Justice		40,000
Charge of the *Consolidated Fund* for the Quarter ended 31st March, 1866, viz.:—		
Interest of the Permanent Debt	£5,595,040	
Terminable Debt	902,581	
Principal of Exchequer Bills	1,278,900	
Interest of „	53,912	
The Civil List	102,171	
Other Charges on Consolidated Fund	455,580	
Advances for Public Works, &c.	269,188	
Sinking Fund	672,053	
		9,329,425
Surplus Balance in Ireland beyond the Charge of the Consolidated Fund in Ireland for the Quarter ended 31st March, 1866		542,705
		£22,287,473

BRITISH CORN.—*Gazette Average Prices* (England and Wales), *First Quarter of* 1866.

[This Table is communicated by the Statistical and Corn Department, Board of Trade.]

Weeks ended on a Saturday, 1866.	Weekly Average. (Per Impl. Quarter.) Wheat.		Barley.		Oats.	
	s.	*d.*	*s.*	*d.*	*s.*	*d.*
Jan. 6	46	8	32	9	23	6
„ 13	46	1	32	6	22	8
„ 20	45	7	32	10	22	10
„ 27	45	6	33	1	23	3
Average for January	45	10	32	9	23	1
Feb. 3	45	10	33	–	23	1
„ 10	45	5	33	6	23	6
„ 17	45	9	33	9	23	–
„ 24	45	5	34	8	23	10
Average for February	45	6	33	9	23	4
March 3	45	7	34	11	23	5
„ 10	45	4	35	7	23	11
„ 17	45	6	35	10	23	10
„ 24	45	8	36	6	24	1
„ 31	44	11	36	9	23	11
Average for March	45	4	35	11	23	10
Average for the quarter	45	6	34	3	23	5

RAILWAYS.—Prices, *Jan.—March;—and* Traffic, *Jan.—March*, 1866.

Total Capital Expended Mlns.	Railway.	For the (£100). Price on			Miles Open.		Total Traffic. first 13 Weeks. (000's omitted.)		Traffic pr. Mile pr. Wk. 13 Weeks.		Dividends per Cent. for Half Years.					
		1st Mar.	1st Feb.	1st Jan.	'66.	'65.	'66.	'65.	'66.	'65.	30 June, '65.		31 Dec. '64.		30 Jun. '64.	
£					No.	No.	£	£	£	£	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*
53,2	Lond. & N. Westn.	123¾	125½	126½	1,274	1,274	1,356,	1,275,	88	82	60	–	70	–	57	6
47,6	Great Western	58¾	58¾	59¼	1,292	1,271	871,	839,	55	56	20	–	32	6	30	–
18,2	„ Northern	126	127½	127½	404	404	451,	439,	89	87	55	–	87	6	55	–
23,6	„ Eastern	39½	38½	43	727	669	415,	404,	50	47	10	–	25	–	12	6
14,6	Brighton	98	100	104	294	268	228,	200,	84	61	50	–	60	–	50	–
18,6	South-Eastern	77	74	75	315	308	273,	255,	71	72	25	–	57	6	42	6
16,4	„ Western	93	94	96	500	490	273,	251,	51	40	45	–	55	–	45	–
192,2		88	88¼	90	4,806	4,684	3,867,	3,663,	70	64	38	–	55	4	41	9
26,1	Midland	123½	123½	123¾	677	663	630,	579,	78	69	65	–	77	–	70	–
21,1	Lancsh. and York.	120	120½	123	403	403	535,	464,	115	92	55	–	60	–	57	6
14,1	Sheffield and Man.	65	59	63	246	246	256,	222,	86	70	10	–	25	–	27	6
37,1	North-Eastern	110	112	111½	1,208	1,160	829,	756,	59	53	55	–	62	–	55	–
98,4		104½	103¾	105¼	2,534	2,472	2,250,	2,021,	84	71	38	9	56	1	52	6
14,8	Caledonian	132	130	129	416	408	343,	315,	64	60	67	6	72	6	65	–
5,7	Gt. S. & Wn. Irlnd.	92	94	94	387	387	—	—	21	20	45	–	45	–	45	–
311,1	*Gen. aver.*	96¾	96¾	98	8,143	7,951	6,460,	5,999,	70	62	40	11	56	1	47	1

Consols.—Money Prices, 1*st March*, 87 to ⅛ (de.), and 87⅛ to ¼ acc.——1*st Feb.*, 86⅝ to ¾.—1*st Jan.*, 87 to ⅛ (de.), and 87 to ¼ acc.

Exchequer Bills.—1*st Mar.*, 6*s.* to 2*s.* dis.—1*st Feb.*, 6*s.* to 2*s.* dis.—1*st Jan.*, 6*s.* to 3*s.* dis.

BANK OF ENGLAND.—WEEKLY RETURN.

***Pursuant to the Act 7th and 8th Victoria, c.* 32 (1844), *for Wednesday in each Week, during the* FIRST QUARTER (*Jan.—March*) *of* 1866.**

[0,000's omitted.]

1	2	3	4	5	6	7
Issue Department.					Collateral Columns.	
Liabilities.	Dates.	Assets.				
Notes Issued.	(Wednesdays.)	Government Debt.	Other Securities.	Gold Coin and Bullion.	Notes in Hands of Public. (Col. 1 minus col. 16.)	Minimum Rates of Discount at Bank of England.
£ Mlns.	1866.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	1865. Per ann.
27,03	Jan. 3	11,01	3,63	12,38	21,78	30 Dec. 7 p.ct.
26,72	„ 10	11,01	3,63	12,07	21,44	1866.
26,83	„ 17	11,01	3,63	12,18	21,40	5 Jan. 8 „
26,91	„ 24	11,01	3,63	12,26	20,98	
27,00	„ 31	11,01	3,63	12,35	21,06	
26,92	Feb. 7	11,01	3,63	12,27	21,01	
27,05	„ 14	11,01	3,63	12,40	20,76	
27,97	„ 21	11,01	3,98	12,97	20,56	23 Feb. 7 „
28,11	„ 28	11,01	3,98	13,11	20,77	
28,15	Mar. 7	11,01	3,98	13,15	20,73	
28,43	„ 14	11,01	3,98	13,43	20,53	16 Mar. 6 „
28,55	„ 21	11,01	3,98	13,55	20,63	
28,50	„ 28	11,01	3,98	13,50	21,62	

BANKING DEPARTMENT.

8	9	10	11	12	13	14	15	16	17	18
Liabilities.					Dates.	Assets.				Totals of Liabilities and Assets.
Capital and Rest.		Deposits.		Seven Day and other Bills.		Securities.		Reserve.		
Capital.	Rest.	Public.	Private.		(Wdnsdys.)	Government.	Other.	Notes.	Gold and Silver Coin.	
£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	1866.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
14,55	3,30	7,58	14,73	,44	Jan. 3	9,89	24,73	5,25	,73	40,60
14,55	3,43	3,64	16,23	,45	„ 10	9,89	22,33	5,28	,81	38,31
14,55	3,50	3,27	14,38	,42	„ 17	9,87	19,90	5,43	,85	39,15
14,55	3,51	3,44	14,13	,40	„ 24	9,86	19,42	5,93	,81	36,04
14,55	3,25	4,14	13,39	,42	„ 31	9,86	19,41	5,94	,81	36,03
14,55	3,56	4,55	12,34	,41	Feb. 7	9,86	18,86	5,91	,78	35,41
14,55	3,57	4,93	12,18	,40	„ 14	9,86	18,58	6,29	,89	35,63
14,55	3,59	5,05	12,59	,41	„ 21	9,91	18,02	7,41	,85	36,20
14,55	3,77	5,49	12,74	,41	„ 28	9,91	18,81	7,34	,85	36,93
14,55	3,80	6,06	12,70	,43	Mar. 7	9,91	19,30	7,42	,90	37,54
14,55	3,81	6,30	12,72	,38	„ 14	9,91	19,05	7,90	,90	37,77
14,55	3,87	6,82	12,48	,40	„ 21	9,91	19,39	7,92	,90	38,18
14,55	3,89	8,37	13,33	,39	„ 28	10,91	21,88	6,88	,86	40,53

CIRCULATION.—COUNTRY BANKS.

Average Amount of Promissory Notes in Circulation in **ENGLAND** ***and*** **WALES** ***on Saturday, in each Week during the*** **FIRST QUARTER** ***(Jan.—March) of*** **1866;** ***and in*** **SCOTLAND** ***and*** **IRELAND,** ***at the Three Dates, as under.***

ENGLAND AND WALES.				SCOTLAND.				IRELAND.		
DATES.	Private Banks. (Fixed Issues, 4,14).	Joint Stock Banks. (Fixed Issues, 3,23).	TOTAL. (Fixed Issues, 7,37).	Three Weeks, ended	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 2,75).	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 6,35).
1866.	£ Mlns.	£ Mlns.	£ Mlns.	1866.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
Jan. 6	2,98	2,78	5,76							
„ 13	3,03	2,80	5,83	Jan. 6	1,05	2,96	4,62	3,05	3,38	6,43
„ 20	3,02	2,73	5,75							
„ 27	2,99	2,63	5,62							
Feb. 3	2,93	2,56	5,49	Feb. 3	1,56	2,77	4,33	3,02	3,31	6,33
„ 10	2,91	2,54	5,45							
„ 17	2,87	2,51	5,38							
„ 24	2,82	2,49	5,31							
Mar. 3	2,80	2,48	5,28							
„ 10	2,80	2,47	5,27	Mar. 3	1,59	2,70	4,29	2,96	3,19	6,15
„ 17	2,81	2,47	5,28							
„ 24	2,82	2,51	5,33							
„ 31	2,89	2,56	5,45							

FOREIGN EXCHANGES.—***Quotations as under,*** **LONDON** ***on Paris, Hamburg & Calcutta; —and New York, Calcutta, Hong Kong & Sydney, on*** **LONDON**—***with collateral cols.***

1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Paris.				Hamburg.				Calcutta.				
DATES.	London on Paris. 3 m. d.	Bullion as arbitrated. Agnst. Engd.	Bullion as arbitrated. For Engd.	Prem. or Dis. on Gold per mille.	London on Hambg. 3 m. d.	Bullion as arbitrated. Agnst. Engd.	Bullion as arbitrated. For Engd.	New York. 60 d. s.	India Council 60 d. s.	At Calcutta on London. 6 m. d.	Hong Kong. 6 m. s.	Sydney. 30 d. s.	Standard Silver in bars in London. pr. oz.
1866.		pr. ct.	pr. ct.			pr. ct.	pr. ct.	pr. ct.	*d.*	*d.*	*d.*	pr. ct.	*d.*
Jan. 6 ..	25·60	·2	—	½ pm.	13·10¼	—	—	159½	23⅜	25½	54	1¾ pm.	61⅜
„ 20 ..	·52½	—	·2	1 „	·9¾	—	—	155½	„	„	55	„	„ ½
Feb. 3 ..	„	—	„	1½ „	·10	—	—	151	„	„ ⅜	„ ½	„	„ ½
„ 17 ..	·60	·1	—	½ „	·11	—	—	150	„	„ ½	„ ¼	„	61
Mar. 3 ..	·55	·2	—	„	·10½	—	—	148½	„	„	55	„	60½
„ 17 ..	·57½	·3	—	½ „	„ ½	—	—	145	„ ¼	„	„	„	„

Vol. XXIX.] [Part III.

JOURNAL OF THE STATISTICAL SOCIETY,

SEPTEMBER, 1866.

On the BUDGETS *and* ACCOUNTS *of* ENGLAND *and* FRANCE.

By MAJOR-GENERAL BALFOUR, C.B., *Royal Artillery.*

[Read before the Statistical Society, Tuesday, the 15th May, 1866.]

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Preliminary Remarks.

THE two papers placed before the Society by our indefatigable colleague and experienced statistical inquirer, Colonel Sykes, "On "the Naval and Military Budgets of England and France," have already brought about some very beneficial changes in the arrangement of information previously set forth in a vague form, in the naval and military estimates of this country, and our colleague will doubtless in his place in Parliament, as hitherto, continue to urge those further improvements which can and ought to be effected in those important documents. These papers[*] have also excited a discussion in this Society on the subject of the public accounts of England and France, and a desire has been expressed that a paper on this question, should be added to our proceedings, as a sequel to the able and suggestive paper by our esteemed colleague Mr. Jellicoe, which has not yet been followed up by any other kindred contribution.

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[*] See vol. xxvii of the *Journal*, p. 1 *et seq.*, also p. 36 *et seq.* of present volume.

In undertaking to supply a paper on this subject, I desire to guard myself against the imputation of presumption. I am well aware that the subject is so vast, that in order to do justice to it, a combination of practical statesmanship, with a thorough knowledge of accounting is required, and in such a high degree, as no one individual can be expected to possess; but acting on our Society's principle that it is by a series of contributions, and not by any one paper, that our knowledge on any question can best be extended, I venture now to place before you a few notes on the budgets and accounts of England and France, mainly in the hope that other members of the Society better qualified and more deeply versed in the financial systems of the two nations, may be induced to devote some portion of their leisure to the consideration thereof, and that by the publication of the thoughts of many minds we may secure that exact, clear, and full information which alone can lead to useful improvements in the public accounts of this country.

It must be premised, however, that these notes are merely an outline of a portion of the subject, for, to enter into those minute details which accounts so much require in order to be fully understood, or to write with any view to exhaust the subject, would have demanded much and varied labour and research, and occupied more space in our *Journal* than is quite consistent with the objects of the Society; even now, with every desire to abridge my paper, perhaps I shall be found to trespass too long on your patience, and the more so as a discussion on the comparative merits of different systems of national accounting is necessarily technical, to many uninviting, moreover involving the necessity of repetitions to ensure clearness.

Before proceeding further, I desire to offer my tribute of respect to Mr. Anderson, the able, zealous, and devoted officer of the Treasury, who, with the late Mr. Arbuthnot, long contended, though with but partial success, for those improvements in public accounting so much needed, and so well known to them as being possible. In the discharge of my official duties in India, many of the principles which Mr. Anderson has urged, were adopted by me; and having paid due regard to his recorded views, I believe they were applied in a manner he would have approved. I may also mention the sound principles consistently advocated, in the face of discouraging opposition, during many years by Mr. Romilly, late chairman of the Audit Commission, and by Mr. Macaulay, long secretary of that board, now, happily for the nation, a commissioner. Sir William Dunbar, the present head of the Audit Board, is also a supporter of an efficient audit, having recently, before the Select Committee on Public Accounts, upheld the principles for which the Audit Commissioners have so long contended.

I would also direct special attention to the exhaustive report of Sir John Bowring, published upwards of thirty years ago, on the "Accounts of France and the Netherlands," and express my high appreciation of the comprehensive and lucid information afforded on the principles and details of the accountancy of these two countries. I am persuaded that if the repugnance to reading a big blue book could be overcome, all who made the effort to read Sir John Bowring's report, would be much rewarded by the rich fund of useful information to be acquired therefrom, and obtain a knowledge of the principles on which our public accounts must be eventually based.

I.—*Explanation of the word Budget, and of the Scope of National Accounting.*

I have placed at the head of this paper the designation, *Budgets and Accounts of England and France,* not with a view of discussing financial measures of the two countries, after the manner of our Chancellor of the Exchequer, but because the term used may apply to those subordinate arrangements required for the lucid record of the facts arising out of the operation of the financial plans which it is the duty of statesmen to form, and which may be seen to be well stated in the memorandum on financial control in the Public Money's Report.

I use the word "Budget" in the sense attached to it by M. le Marquis d'Audiffret, in the third volume of his "Système Financier," third edition of 1863, an author who appears to be a good authority on financial questions. At the age of 18 he commenced his service (in 1805) under the direction of the first Napoleon's great finance minister, Count Mollien, has risen from a subordinate post to the highest administrative office connected with the finances of France, and, as a reward for good and faithful service, the Emperor has placed him at the head of one of those great societies of credit which have been so useful to France, where he has devoted his leisure to revising and republishing his financial papers.

Monsieur d'Audiffret says, the word "budget," or "bouge," or "bougette," "according to Pasquier and ancient authors, as well as "in the old language of Rabelais, is derived from the Latin word "*Bulga*, become Gallic, which expresses a bag, a pocket, a purse, "its origin is therefore Latin and French; England has applied it to "the great leather bag, which for a long time contained the docu-

" ments presented to Parliament to explain the resources and the " wants of the country. This new interpretation has only been " adopted in our financial language in imitation of the forms and " expressions of the constitutional idiom of Great Britain, and only " appeared for the first time, in the Acts of the French Govern- " ment, in the Decrees of the Consuls in the interval between the " months of August, 1802, and the month of April, 1803, in which " this term budget replaced the former estimate of receipts and " expenditure. The signification of purse explains the custom of " employing it equally, with the same acceptation, for the partial " results of a single service of receipt and expenditure, or for the " whole of the services of the State."

According to that valuable official publication containing the imperial decree of 31st May, 1862, on the French accounts, the budget is stated to be the "act by which the annual receipts and " expenditure of the State, or of other services which are by law " subject to the same rules, are foreseen and authorised. Every year " the different ministers prepare the budgets of their respective " departments. The minister of finance aggregates these budgets, " and adds to them that of the receipts, to complete the general " budget of the State."

In a work on public accounting in France, by Monsieur de Montcloux, quoted by Mr. Anderson in his evidence before the Select Committee of 1856 on public moneys, it is stated that, "accounting " in its application to the finances of the State, exercises a great " influence on public prosperity. The finest theories of finance " would come to nothing, without a system of accounting wisely " associated with them." The clear accounting, here referred to, is in fact the demonstration of the practicability of such theories, and the assurance to the nation of their soundness. Monsieur de Montcloux further adds, "Public economy does not consist in " the reduction of some charges, nor in the treasuring up of money. " It is not always to the diminution of the amount of taxation that " attention should be given in a rich country; it is far more important " to make sure of the good employment of the revenues. A nation " which would not pay to Government all it could pay, would ill " understand its own interests, but the Government which makes a " false application of the funds confided to its care, would understand " its duties still worse. It is not, therefore, sufficient that taxation " should be well balanced, so as to render it as light as possible; it is " not sufficient that the treasury should be filled, and easily filled; it " is necessary, also, that a simple, regular, and complete system of " accounting should afford the means of appreciating the exact extent " of the resources of the country, and should guarantee to all that no " part of the sacrifices demanded from them shall be wasted in useless

" expenses. This science, however, if it can be called one, is far from " brilliant, and has only attracted the attention of statesmen in a " very secondary way. High financial conceptions and vast financial " plans have received much attention, but in all these theories very " little room has been given to the modest art of ensuring the due " preservation of the riches, which so many projects were infallibly " to throw into the coffers of the State." This remark is most true, for a clear record of the appropriation of the public funds is a guarantee for their judicious application.

In a work entitled "Finances and Policy," by M. Casimir Perrier, it is said, "It is only with money that great things are done. M. le " Baron Louis used to say to his colleagues, 'make good financing, " 'and I will make good policy.' Good finances are the powerful " auxiliary of good policy."

In another French work on the budget it is stated that "governing and laying out money are two things almost identical, " or at least inseparable. In the administration of public expenditure, the duty of a well-ordered system of accounting is nothing " else than that of a loyal publicity. To this end it is necessary to " collect in time all the facts, describe them at their date, afterwards " exhibit them in order, and publish accounts entirely reliable, that " is, susceptible of being proved. In a word, good accounting is an " art, and in the case of a vast administration it is even a very difficult art to attain and practise."

II.—*Comparison between the Financial Systems of France and England.*

The following appear to be the prominent features in the public accounting of France. The French financial system is based, primarily, on an accurate and carefully examined general budget, prepared by, and under the responsibility of, the finance minister, of expected national revenues from all sources, and liabilities of all departments, so clearly and fully drawn out as to show, when compared with accounts of completed results,—that is of actual income and payments—how far the anticipated revenue and liabilities arranged under a well defined set of heads, common to both budget and account, have been realized. All branches of the state are classified and made subordinate to one or other of the great ministers of state, civil and military, and all departments carry on their financial duties upon rules common to all; the details of each budget and of each account are so arranged as to ensure the totals fitting into the general budget of the finance minister, an account which the Court of Accounts compiles.* The periods for which the revenue is calculated to be due, and within which the services are to be performed, and the dates for opening the whole of the budgets and for closing the accounts, are defined. The year of account comprises revenue actually due and all liabilities for services actually performed between the 1st January and 31st December, but income and payments in settlement of these revenues and liabilities, provided claims are made within that period and for eight months subsequently, being included in the year's account. This is the account of the service of the year. No revenue is due, and no liability can be incurred, and no expenditure permitted without a previously-accorded credit. Transfers of credits, to meet one liability for another liability, are opposed to principle, and are rarely made, then only on a formal imperial decree. Nearly all expenditure is made as final payments, for claims inquired into and settled, on vouchers bearing a reference to the particular divisions of the budget authorising them; the claim, after being examined, and passed by one authority, is liquidated by a payment made by another and independent authority; all such vouchers being subsequently compiled into one account for each department and examined, and their accuracy, in all respects, verified by an independent board. Lastly, the whole transactions of the service of the year, as well as those during the year, of all branches and departments, both of receipt and expenditure of public moneys, are, by the Court of Accounts, consolidated and condensed into one complete annual account, and, with an elaborate report, laid before the Emperor and Chambers. In the earlier stages, there is a healthy check before commencing operations, and yet free action in carrying out details; the later stages present a classified and completed whole, confirmed and approved by an independent board whose power and authority will be found well described by Mr. Anderson, in a report, at pp. 80 and 81 of the Treasury Minutes.*

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* " The whole of the public accounts of France are kept on one uniform plan; " the processes of preferring, examining, admitting, and paying public claims is

In England there is no one general budget excepting the spoken one by the Chancellor of the Exchequer, and there is no record of any comparison between anticipated and realized transactions. The revenues and liabilities due for one year may be and are included in the income and expenditure of a different year. The departmental budgets vary in form and arrangement, not only according to the departments, but even according to the number of offices in these departments; they are so loosely prepared as generally to allow of unexplained surpluses or deficiencies, the money requirements are

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"the same in all departments; that their forms are framed on one model, "the principle upon which the returns of all the departments are compiled being "uniform, they are blended without difficulty in the general balance-sheet of the "finance department."—"Bowring's Report," quoted also in Anderson's Report.

* Parliamentary Paper, No. 160, of 9th May, 1856.

irregularly set forth, some branches deduct fees and other receipts, others by balances brought forward from previous years; they are inefficiently examined, and presented to the House of Commons in a fragmentary form, and, excepting the budgets of army and navy, they are not prepared on the responsibility of ministers of state. The English general statement, erroneously designated an account, is made up, on the receipt side, from moneys actually paid into the Exchequer, without any comparison with the anticipated revenue of the year, or for what year collected; the expenditure side is compiled from special credits on the Exchequer granted to principal accountants, to be drawn on, but without requiring proof of their sufficiency for settling the year's liabilities. Out of these special credits subsidiary credits are then granted, to enable sub-accountants to obtain funds wherewith to meet the expected demands of claimants, without proof of final adjustment thereof appearing in the accounts. Moreover, the moneys granted for one purpose are used for other purposes almost without check. The data used are not prepared on a uniform plan, either as to time or purpose. The balances never closed, never settled. The large surpluses of one year are used for the expenditure of ensuing years. The state of the outstanding national liabilities never ascertained. The entries on the debit side of the cash account of the nation, mainly made up from credits to obtain advances, not from completed payments, are based, in reality, on assumptions and not on facts; finally, the check by independent audit of vouchers for departmental payments does not exist.

These differences may appear of small practical importance, especially when we consider the superior credit enjoyed by the English Government; but the credit of the Government of this country depends mainly on the credit of the people, and that again on the peace and security which has given them leisure for carrying on those pursuits which have raised the national prosperity of England to so high a pitch, besides never having had correct and complete accounts, we are ignorant of their advantages. In France, on the other hand, the frequent political convulsions, and the consequent unsettled state of the public mind, would have brought that great nation to a condition ruinous to itself and dangerous to Europe, but for the aid to stable government, afforded by the satisfaction everywhere felt with the good state of the public accounts, and the well-ordered administrature of the finances.

The appropriate remark was made by our President, to the effect that the officers belonging to the bureaus of France, have devoted themselves with a marked zeal to the business of the nation, without, as he believes, any incentive from the Government and Chambers, for the right performance of their duties. Now no one who studies the many financial volumes published on the French public accounts, can fail to be struck with the administrative ability which these writings display, and with the minuteness and completeness with which details are stated, the object being an endeavour to make them well understood. The French officers so faithfully perform their duties, as to make these financial theories consistent with the practical results.

Some of the benefits from that superiority which the French accounting possesses over that of England may be thus stated. This good and clear accounting supplies the administration with the means of exercising an effective financial control which, besides promoting economy, prevents misappropriations of public moneys, or at least affords the means of promptly discovering them. It furnishes the kind of information needed for checking wasteful, unnecessary, or loose expenditure, and allows of a knowledge being acquired as to the direction in which expenditure can be incurred with advantage to the State. By finally dealing with the transactions of a single year, it defines and brings to a close all the revenue due and all the liabilities created in that year, placing on record the actual income of that year and debt cleared off. The advantage of this course is, that *facts* are ascertained and data accumulated for future reference and comparison, and the unseemly disputes we have in England as to the facts cannot occur in France, seeing that the accounts show forth the actual facts. Thus, in proportion, as the statistics, social, political, financial, and commercial, of any one year approximate to, or greatly differ from, those of another, so may be seen the changes in the condition of the country and of the revenue and expenditure of those years. Anomalies, therefore, are brought to light, useful tests created, and valuable statistical information annually stored up, by this sound practice of dealing only with *accomplished facts*.

Another element contributing to the accuracy of French accounting is the great principle already noticed enforced during this century, from the time of the first Napoleon, that no minister of state shall spend money without having previously obtained a credit on which to draw. Hence, all liabilities or debts created during the year, are clearly defined in the accounts, and thus a thorough check is placed on improvident action, on the part of ministers, such as might involve Government in expenditure not foreseen and provided for.

The first Napoleon's correspondence affords many proofs of the great care he took to restrict the expenditure of his ministers within the limits of the credits granted. True it is, that he kept in his own hands the entire financial control, and allotted to the different branches of administration the amounts which he deemed sufficient for each. Though the retention of this power may shock English ideas, based on the supposed efficacy of Parliamentary check over the abuse of sovereign power, by reason of Parliament having the right to grant or withhold supplies of funds to the Queen, there can be no question as to the care, and also marvellous economy, with which the first Napoleon controlled and directed the vast expenditure which the supposed necessity of his position entailed. The latest published volume of the Napoleon correspondence contains a letter written by the first Emperor immediately after the battle of Essling, entering into minute details on the appropriation of funds for the different branches of administration, set forth in a form, and with a lucidity which could only spring from a full mastery of the subject. I could illustrate this part of the subject, if time permitted, by mentioning characteristic traits in the control exercised by the first Napoleon; and at any rate, refer to the severe rebuke given to the minister of finance immediately after the battle of Austerlitz, when Napoleon told the finance minister that a minister of state could only authorise expenditure out of the credit which the Emperor had previously accorded, and could not disregard this principle, by changing the appropriation of any sum; whatever might happen, the minister had not the right to depart from his limits of authority. There is no doubt that this strict scrutiny enabled Napoleon to maintain up to the day of his fall, an admirable order in the finances of France; and there is nothing more marked than the recognition which even opponents of the dynasty make of the efficient care taken of the detailed expenditure during the first empire and, though opinion is against the amount expended by the second empire, yet objections to its detailed expenditure, as regards its economical management, are rarely expressed even by those opposed to the amount of taxation.

III.—*On Drawing up of Budgets of the Two Countries.*

It is an acknowledged fact that the annual budget is the basis of the annual accounts; there is that close affinity between them, that the latter must, in a great degree, take its complexion from the former. To improve the latter, therefore, the ameliorative process must commence with the former. The connection between budgets and accounts is so prominently striking in the French system, that, not only as a necessary corollary to the foregoing comparison between the accountancy of France and England, but also for its fuller illustration, I must append some remarks on the characteristics of the French and English budgets.

The military budget of France is regarded as the standard to be followed by other branches of French Government; the English military budget is also considered the best in England. In the following examination, the merits and defects of these two national budgets will be compared.

The French budget is delivered to the deputies and senators immediately on the opening of the Chambers, early in January; whereas the English budget is not ready until after Parliament has been called together some time. As to paper, printing, and general outside appearance, the three Parliamentary papers which make up the English military budget of this year, suffer by contrast with the distinct type, good paper, and neatness of the book containing the French military budget. The merit is due to France of offering a budget so conveniently arranged as to induce an examination of the contents, instead of deterring such an attempt, as the English one does. The French military budget is bound up in one volume with the general budget of the nation, including the ordinary budgets of departments. Though forming a thick volume, it is nevertheless turned out with such great care as a book, and opens with such ease at any part of the volume to which reference is desired, as to afford every facility to the person using it. The French officers of administration are entitled to credit for the care with which they put out their financial papers, as shown in the table of contents, the admirable classification of the information, the facilities for referring to any of the budgets and divisions.

The report of the finance minister to the Emperor, and the address of the vice-president of the Council of State to the legislative bodies, and the preliminary notes attached to the budget of each department by the minister of state at the head thereof, form admirable prefaces to the volume and to the separate budgets. By reviewing in a clear and complete manner the course of former budgets, and the state of the finances, and the charges in each department, they bring to prominent notice the important features of the unsettled budgets in contrast with those now submitted, appending full and detailed tables of the receipts and expenses.

These and other excellencies in the French system are however in England viewed as defects, and the French financial documents are mistrusted in England mainly because they show how several French budgets for different years are all at one time kept open or unsettled. The mere acceptance of this fact, such as it is, without any inquiry as to the number of English budgets which are also practically open at the same time, and without seeking for information as to the real object to be attained by so many open French budgets, creates or increases the English prejudice against all French plans, but those prejudices have too long deprived England of those improvements which the French character is so well qualified to originate, and which it has introduced into the French budgets and accounts.

The English military budget comprises expenditure to be incurred between the 1st April, 1866, and 31st March, 1867, and comes into operation within six weeks after being laid before Parliament.

The French budget now before the Chambers, commences on 1st January, 1867, and ends with the 31st December of that year; it was before the Chambers in January, 1866, and will be left for examination and discussion by the deputies of France until July, when the law granting the credits necessary to meet the payments in the year following, is passed. The French Chambers are thus enabled, by an early prepared budget, to grant credits before any expenditure can be incurred, and ample time is allowed for examining the budgets of all French departments before authorizing the expenses. Whereas in England, through delays in submitting budgets, a constant demand is made on Parliament for "supply," on the plea that the public service must be provided with funds, in anticipation of the passing of the respective budgets. The importance of enforcing the great political and financial principle of not allowing any national money to be expended by the ministers of state until the national representatives shall have investigated, approved, and authorised the services or purposes for which the funds are to be applied, is strictly recognized in despotically-governed France. But in free England the practice of voting aids or supplies of money in anticipation of the passing of the budgets, and thereby pledging the faith of the country to accept the services set forth in these budgets, for which the funds granted "on account" are to be expended, virtually cuts off from Parliament that control over the national expenditure which members of the House of Commons are, by the constitution, bound to exercise. And all arises from the dread of having, as in France, too many open or unsettled budgets.

The important object of the French in keeping open budgets is misunderstood. When we hear of the definitive budget of a year being only closed with the final settlement of accounts of actual expenditure for that year, we contrast our one estimate and one account for each year with the many open budgets of France to the disadvantage of the latter. But then we forget that, under our practice, we have loose and vague estimating, and large balances in excess or deficiency to adjust, and outstandings of other years to clear off, so that when our year's account is closed, we are ignorant as to whether it includes all the liabilities either of past years or of those of the current year. Whereas in France the account of the year's expenditure, under different heads when completed, agrees very closely with the entries in the settled budget, and is at any rate always below, never in excess, of the credits, as is usual with us. It is true that the French budgets do not, any more than our own, provide for all expenses eventually incurred, for as the services of the year proceed it is often found necessary to grant additional credits; but it is a legal duty placed on each French minister, to abstain from incurring any liability until a credit has been obtained, and this rule is strictly adhered to. Again, as these additional grants are made, when the Chambers are not sitting, only upon the legal authority of the Emperor, and after due inquiry by the council d'état and finance minister, the test as to their propriety is applied by authorities independent of the minister requiring the grants. The important result of keeping open budgets will be seen in the complete rendering of the transactions of each year. On this broad basis of regularly sanctioned credits, stands the efficiency of the machinery so well established in France, for ensuring accuracy in accounts. No charges are therein admissible unless the previously accorded credits fully bear out their propriety. The rule for applying beforehand for extra credits is enforced by the accounting check, and enables the Emperor to judge how far the foresight of the minister has been exercised. It is true that supplemental estimates are an evil, but the want of foresight is a far greater one. The impropriety with which our ministers spend money without having obtained credits, encourages want of economy and of foresight, whilst the practice of closing the account of expenditure within the year, results in the liabilities of one year being thrown into the accounts of another year. When we see that political changes have not stopped the successful working of the financial machinery, there appears to be good reason for the French claim on behalf of their budgetary system, that it is the best in Europe.

Further, the financial objection against open French budgets and accounts, when fully examined into, is found to be illusory. There is no real ground for the claim of superiority so frequently made on behalf of the English finance system, seeing that our results cannot be tested in the exact way to which the French system is subjected. The English accounts, loose from the way in which compiled, are more so from being based on loose estimates, incompletely examined, hastily passed, and, on the payments made, within the year, not being compared with the estimated amounts, and without testing their propriety by independent audit as to their sufficiency for paying off the year's liabilities. The French budgets' system, complete and uniform for all branches of administration, are clear and specific in setting forth the data on which the expenditure for the service of the year is to be incurred. After being carefully compiled by the respective departments, they are subjected to a severe scrutiny, by independent officials, having ample time afforded for the examination, and practical knowledge by which to judge of the accuracy of the entries; this check is used in a way well calculated to diminish irregularities, it prevents the expression of vague or deceptive demands, and, when the account is rendered, another independent court is able to judge how far the duty has been efficiently performed.

IV.—*Contrast between French and English Accounts.*

The French national accounts are prepared from and based entirely on completed payments, carefully audited, before being authorized to be paid or passed, as to their arithmetical accuracy, as to sufficiency of proof in the bills and vouchers prepared by the claimants, whether the demands are in accord with the budgetary credits, whether the services were performed within the year, as to the correctness and completeness of the payments in clearing off the budget liabilities of the year: and until such inquiry is closed, as to whether the work, duty, or supplies which the budget set forth, have all been shown to be paid for, the disbursements and accounts are necessarily kept open, pending this settlement, but only to the end of August. Finally, the whole of the vouchers for payments made on the authority of the estimates are compiled into one account by the minister of state at the head of each department, and the whole subjected to a severe and independent audit by another independent board, in order to test the perfect agreement of the charges with those in the budget. And thus, whilst the French nation enforces clear and accurate accounting for expenditure actually incurred in respect to liabilities for services within a specified period, the system reacts on the administrative officers by enforcing care in preparing budgets.

The English national account is, in its looseness, in marked contrast with the close, accurate, and strict accounting of France. It is based on the amount of Exchequer credits issued to principal accountants in order to meet payments within that year to which the credits alone apply. These credits neither represent the actual cash drawn out of the Exchequer, nor the actual payments made within that year, nor do the credits clear off all liabilities imposed on the nation during that year; and as there is no written national estimate of revenue and liabilities there is no contrast made, as in France, between anticipated and actual results. The English national account does not show the income due for the year, merely the amount collected within the year; and the expenditure drawn up from credits must, as Mr. Anderson and Mr. Macaulay have stated, be mainly fallacious, and ill-calculated to set forth the real expenditure of the country. The quarterly and annual finance statements, erroneously called accounts, purport to show the receipt and expenditure of the country, and are considered to be promptly published, and generally looked on as very satisfactory documents; the difficulty in dispelling delusions as to their real character is great. Their really defective character has, however, been fully exposed; even in respect to promptness, the French system would not be found, and is not actually, wanting even in this merit; did the French deem the main object of accounting to be the compilation of a simple statement of all moneys put into or taken out of the treasuries, then their treasury accounts do more accurately show a result, which we attempt but cannot show. The French people know too well that such a course would fail to exhibit a true account of the national funds, and prefer authenticated accounts of national income and expenditure compiled from audited vouchers, and are well content to wait till these are ready. They bear with patience all the evils with which the English imagination surround the system of many open or unsettled accounts.

The English nation, being unwilling to allow time for maturing results which would test the agreement between anticipated and actual collections, also of promises to pay, such as the entries in the expense budget may be considered to be, and actual payments made, such as audited accounts would show, insist on having, as their only national statement, "the Cash Account of the Lords of the "Treasury," published annually in the Finance Accounts I to VII. Moreover, as no other account, more perfect than this one, has ever been published for the information of the country—indeed, as much of the national outlay has never been subjected to the examination of the Audit Board—it is impossible to draw up any general statement from audited or verified vouchers. No proof is afforded whether the payments into or out of the Exchequer are authentic, not only as to amounts, but as to their agreement with the sums due within a specified time; consequently, it is impossible to exhibit all the defects of the English mode of accounting for the national income and expenditure by comparing real with these erroneous accounts. Nevertheless, some of these errors may be pointed out by accepting as well audited, though not so in reality, the accounts of the expenditure of the two great departments—army and navy.

For example, No. I of the national account series designated "the cash account showing the whole of the financial operations of "the Lords Commissioners of Her Majesty's Treasury in connexion "with income and expenditure of the United Kingdom," professes to show the annual expenditure for the army separately from that of the navy. But a glance at the finance accounts of a few years will demonstrate that the practice has prevailed of blending under one entry, "army and navy," large sums received from both these branches, as well as large amounts paid away on the joint account; thereby rendering it impossible for any one to ascertain the exact expenditure for either of the two services, or the recoveries, within the year, from each, neither is it possible to ascertain, whether all the moneys due for the year and payable within the year, have been duly paid.

Thus, in the cash account for the year ending 31st March, 1861, the very large sum of 3,043,896*l.* is entered as a disbursement under the one head "Naval and Military Operations in China." And though the House of Commons is primarily responsible for having by its vote granted any such amount as this for the general use of both, without requiring the appropriations to each service to be shown, still the Comptroller-General of the Exchequer had a right to insist that the credits issued by him to the Paymaster-General for the expenses of the two services, should have specifically stated the amounts for one or other, and not given one credit for both in common. Thereby he would have enabled the Lords of the Treasury to set forth, in the annual cash account, the credits as separately appropriated to the two heads, army and navy.

Owing to this blending of disbursements for both services under one head common to both, I am compelled to compare the actual expenditure, certified to by the Audit Board, for both departments with that set forth in the "cash account" as having been expended for both. During the last eight years, for which complete accounts are available, in the one year 1856-57 the hitherto important national "cash account" showed a total expenditure of 1,510,614*l.* less than the amount certified to by the Commissioners of Audit as having been incurred for the two services; but in the year following the Commissioners certified that 1,815,394*l.* had been expended for both services, less than the sum entered in the cash account. This compensating quality in respect to excesses of one year balancing the deficiencies in another year, has frequently been urged as a ground of excellence in our system of accounts, rendering unnecessary the careful and elaborate efforts made in France to secure, by good system, that accuracy which England only obtains by the chance of errors correcting errors.

But this happy-go-lucky system of obtaining accuracy in the national accounts by making one error correct another, which would, if resorted to by merchants and bankers, soon land them in the Bankruptcy Court, cannot, even as respects the national accounts, serve the purpose of those who approve the plan. For, on adding up the whole expenditure for army and navy as entered in the last eight years' "cash accounts," and comparing the total with the amounts certified to by the Commissioners for Auditing the Public Accounts, as having been expended for these two services during the eight years ending 31st March, 1864, the excesses and deficiencies of these several years are found to amount to the vast sum of 6,741,705*l.*; and by striking a balance between the excesses and deficiencies on the eight years' total, the national "cash account" shows an expenditure, for combined army and navy services, in excess of the actual expenditure which the Audit Commissioners have certified to as the actual outlay, amounting to 2,971,641*l.*, or equal to one year's national surplus, which Mr. Gladstone has been so happy as to have at his command for the last three years.* This great difference between national and departmental accounts could be made much more extensive by an exhibition of the excesses and deficiencies in the items composing the detailed accounts of each year, and which are wrongly made to counteract errors of far more considerable extent in the year's transactions.

This unlooked-for excess is fortunately in favour of the nation, seeing that we have actually expended less than our national accounts show, but, instead, it might have been a real excess and not a saving. Had the same loose system of accounting been employed in France, then, with the low morality so freely charged against the French administrators, the expenditure for the army and navy of that country, might have been made to appear during the past years as much less than the actual outlay. At all events, had this extent of error—even if fallen into innocently and from ignorance, as may be supposed to have happened in England—occurred in France, then, with the large amount in sterling money converted into francs, how great would have been the outcry against French deceit and trickery. It might have been said, here are financial errors of excess and deficiency to the extent of 167,000,000 frs., and thereon imputations of the grossest nature, if the errors had diminished the apparent expenditure, whilst more cost had actually been incurred, for increasing the strength of the naval and military forces of the empire.

The French endeavour to guard against this great English error by keeping distinctive budgets open for each year, until the accounts can be closed without the fear of such a result. At present they appear to have four years' accounts open, those for 1864, 1865, 1866, and the one for the year 1867. The English accounts still practically open—naval and military—are those for the years extending from 1st April, 1864, to 31st March, 1865, for 1866, and for the year ending 31st March, 1867. But were it the practice to prepare English budgets as far in advance as those of France, and to insist on their being corrected from time to time in anticipation of, or as the necessity for, additional expenditure arises, then England would have just as many open accounts. The French do not, however, trust their administrators as the English do, and this is another cause for open accounts. The laws of France stringently require—and means are taken to enforce the law—that no payments of moneys shall be made unless the budget provides for it, and none beyond the expiration of eight months from the close of the year to which the budget belongs; such payments must have been authorized within seven months of the close of the budget year, proofs being at the same time required that the services and duties for which payments are thus made were actually performed during the year, and that the payments are final. All these payments must be audited, compiled, and reported on to the Emperor before the close of a year after the transactions are closed.

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* Appendix, Table I, p. 436.

No such strictness as that usual in France prevails in regard to our accounts. The payments on account of expired years' budgets may, in this country, extend far beyond the period for which they were framed, and without any authority being obtained, until after the payment has been made. This facility in spending, no doubt facilitates the closing of the paper designated an account, but not before the completion of our liabilities. The statements of expenditure certified to by the Audit Commissioners, further show that as great delays occur in passing our charges as in France, whilst we are not in possession of equally as full accounts. Their certificates for the closing of each year's accounts of the army audited expenditure, since 1856-57, are dated twelve months after the close of the year to which the accounts appertain, except as regards the accounts of 1862-63 and 1863-64, for which the certificates were given within twelve months from the close of the year. The certificates of the Commissioners appear to be affixed to the naval accounts in about ten months after the close of the year. The accounts of both services may have been earlier closed, in order to allow of the compilation of accounts being made for the examination of the Commissioners; but as regards the army, I cannot ascertain that, excepting in one instance, these have been closed so early as the French accounts are required to be by law. As respects this exceptional year, the statements do not appear to have been laid before Parliament until April, or thirteen months after the expiration of the year. Even as respects time, France, with her perfect system, is not behind our very loose one, and has the advantage of making the entries in the account compare with the budget liabilities, and to prove to the nation how far these remain unsettled. Nations, as well as individuals, are safe when they know that their debts are paid off.

V.—*Test of Accuracy of French Accounts.*

There is an excellent opening afforded for testing the fulness of the published French accounts, by the remarks in a letter from the "Times" Correspondent at Paris, published in the "Times" of 2nd May, 1866, wherein it is stated, in respect to the absence of all signs of activity in the War Department of France in connection with the complications in European politics, that "there is "very little movement there as far as I can learn." He nevertheless, however, proceeds to point out, that "it must not be forgotten, "that of the large sums placed at the disposal of the Government "in 1859 for freeing Italy from the Alps to the Adriatic, a con"siderable portion was saved by the unexpected Peace of Villa-

" francs, and which, I suppose, did not find its way back to the " Treasury; and that of the immense war material required for " executing to the full the imperial programme a large amount " remained unemployed, which was carefully stored up for future " use. All this is preserved intact, and may be forthcoming at the " shortest notice, and without any apparent movement."

Now, the history of the transactions connected with the money borrowed in 1859 is easily extracted from the published French accounts. The law of 2nd May, 1859, authorised the finance minister to inscribe on the great ledger of the kingdom, as a public debt, an amount of rentes necessary to provide a capital of 500,000,000 frs. The same law authorized the minister to alienate such a sum in rentes of 4½ and 3 per cent. rates, as would be necessary to produce, independently of the sum of 500,000,000, a supplementary capital which shall not exceed 20,000,000, in order to facilitate the settlement of subscriptions, and to cover charges of discount resulting from anticipated payments, making a grand total of 520,000,000 frs. The accounts show that the total subscriptions amounted to five times the required loan, that the amount of the loan definitely accepted was only 519,667,877 frs.; that the payments made up to the 31st December, 1859, were 364,578,842 frs., leaving a balance of 155,089,035 frs. The accounts for the year 1860 show, that the amount, as accepted, was paid up; that the entire loan was credited, not to the War Department, but to the Treasury, under the control of the finance minister, who, like all other ministers, renders an account of his departmental transactions.

The accounts also show that extraordinary credits accorded to the war and marine departments, for the expenses of the Italian war, in 1859 and 1860, amounting to 446,252,043 frs., and the unused balance of the 520,000,000 frs., namely, 73,190,158 frs., was, under the law of 14th July, 1860, transferred as a special resource to the account of, and made applicable to, the payment of great public works of utility. The idea that any portion of this loan of 1859 is specially set apart for any secret combinations of France in the present state of Europe, is therefore unfounded.

The accounts of the war minister fully set forth the whole of the credits granted by the Treasury out of this special loan, for extraordinary army expenses in the war in Italy, the detailed expenses actually incurred, and specially debited thereto, are stated; and the actual balance of the special credit, from the 520,000,000 loan, is shown to have been surrendered to the Treasury, and incorporated by the finance minister, in his account, as a disposable resource of the nation. The special credits also accorded to the marine department, and extraordinary expenses incurred in 1859 and 1860 by that department, are also entered in the general accounts. A reference to the detailed accounts of the minister of marine would show the detailed expenditure of the total sum dranw from the Treasury out of the credits, as fully as do the War Department accounts, and also the balance surrendered.

The other statement of the "Times" Correspondent is, that a large amount of war material collected for the war in Italy remained unexpended, and was stored up for future use. The real state of the case may be seen from the books of the War Department. These show details which we cannot obtain in this country. On the 31st December, 1857, the total value of army war material of every description, including horses, arms, provisions, and other stores of every kind, both in magazines and in use with the troops, was 619,929,013 frs.; their value, on the 31st December, 1858, was only 611,821,022 frs., a decrease of about 8 millions of francs; on the 31st December, 1859, the value was raised up to 642,911,277 frs., being an increase of 31 millions of francs; on the 31st December, 1860, the value was 651,641,854 frs.; the value fell down, on 31st December, 1861, to 645,856,748 frs.; and on the 31st December, 1862, still further, to 640,997,201 frs., and rose, on the 31st December, 1863, to 649,447,368 frs. The detailed accounts of the war material of the French army show the yearly additions and diminutions therein, under each of the principal heads of service under which the war material is classified. Amongst the augmentations, in 1859, the supplies of provisions, of forage, and the purchase of horses, required about two-thirds of the whole sum by which the value of the war material was augmented in the year of the war in Italy. The provisions and forage must by this time be either consumed or destroyed, and the horses have become old, or been sold to the farmers. The only permanent augmentation is in the artillery material, increased in 1859 by 8,219,063 frs.; an addition of a trifling and insignificant character. The account of naval material would show in full detail the additions made thereto, consequent on the war in Italy.

But, so admirably organized is the French war system, that the main additions to raise the army to a state of war, are men and provisions, and these are available at short notice; so that under the French organisation all preparations for war may be deferred till war is declared.

VI.—*Origin of the English Forms of National Accounts.*

In 1797, a Committee of the House of Commons arranged the forms in which the national accounts are mainly at present laid before Parliament; the receipt side of the account being then, as at present, compiled from sums actually paid into the Exchequer, and the disbursements, from the actual expenditure of all departments during the first three-quarters of the year, the last quarter being made up from advances made to the several departments. But the events of the early part of this present century caused the accounts of the departmental expenditure to fall into arrears, thereby vitiating even the partial accuracy which this mode of accounting possessed.

Before the Select Committee on Public Accounts of this session, Mr. Chisholm, of the Exchequer Office, in reference to the proposal again to prepare the account of national expenditure from the payments of the Paymaster-General instead of upon the Exchequer issues, stated that "that practically has been attempted some time "ago in the finance accounts from 1801 to 1822." "The expen-"diture laid down in these accounts is not the expenditure accord-"ing to the issues from the Exchequer, but it is partly according "to the payments by the large departments, and partly according "to the charge. The result is, that it is perfectly impracticable "to make any balance-sheet whatever from the income and expen-"diture, as they appear in the finance accounts for that time. I "endeavoured to do it for the Irish Taxation Committee for the "period from 1801 to 1817, and the result was, that it appeared "that in the accounts of Great Britain, taking on one side the "balance in the Exchequer at the commencement of that period, "and all the receipts into the Exchequer added to that, and on the "other side, all the payments as they appeared in the finance "accounts, and the balance remaining at the end of the time, there "was an excess of upwards of 15,000,000*l.* on the expenditure side "over the receipt side. The principal cause of this excess was "that the expenditure of the distributing officers of the army and "navy services included sums otherwise received than through the "Exchequer, such as from the sale of old stores and other extra "receipts, which are not shown in the accounts of income." This objection to the former practice of framing the accounts on payments, and not on credits, is therefore based on bad accounting, in allowing extra receipts to be used in an irregular way, at variance with a resolution of the House of Commons, inserted in the "Precedents of Proceedings in the House of Commons," London, 1818, new edition, vol. iii, p. 89, passed on the 9th May, 1711, as follows: "Resolved, that the applying any sum of unappropriated "money, or surplusages of funds, to uses not voted, or addressed "for by Parliament, hath been a misapplication of the public "money." There are other and more modern resolutions prohibitory of a practice which has vitiated our national accounts.

It further appears that, consequent on some differences between the annual finance accounts and a balance-sheet laid before Parliament, a "select committee was appointed in 1822 to consider the "best mode of simplifying the accounts annually laid before Parlia-"ment," and they reported that "the forms then in use are nearly "the same as those which were recommended by the committee of "1797, and which were appended to the report of that committee. "The principal and most prominent defect in the present form of "the accounts is, that they neither do, nor can exhibit any balance "between income and expenditure of the year. The income side of "the account shows the amount collected from the subject, and the "amount paid into the Exchequer within the year, and it is obvious "that in order to give a balance the expenditure side ought to con-"tain a statement of the payments out of the Exchequer during the "same period. The expenditure sheet, however, has not been "framed upon this principle, and with respect to some of the chief "heads of service, such as the army and ordnance, instead of ex-"hibiting a statement of the issues from the Exchequer, it gives the "amount of payments by the distributing public officers, such as the "Paymaster-General of the Army, and the Treasurer of the Ordnance, "to whom the moneys required for their respective services are issued "from the Exchequer."

"The accounts of income and of expenditure are therefore ac-"counts of different kinds, the one being an Exchequer account and "the other not, and no true balance can be struck by comparing "them together. The impossibility of striking a balance between "income and expenditure, by any examination of the present form "of accounts, is of itself a material defect, but this defect is also "attended with the further inconvenience that it allows the possi-"bility of the existence of errors, which would necessarily be "detected if the construction of the accounts were such as to require "a balance to be struck."

The committee stated that the "alterations they suggest in the "form and arrangement of these accounts will tend materially to "render them more simple and intelligible." They also added that they "have not failed to remedy a defect in the forms which "they recommend; the expenditure side will show the issues made "from the Exchequer, and not the payments by the distributing "officers, and will therefore tally with the statement on the income "side, of sums paid into the Exchequer during the year." The entries in the forms proposed by the 1822 Select Committee are as follow: "An account showing on one side the total income "of the United Kingdom raised from the subject, and on the "other side the whole of the public expenditure, exclusive of the "sums applied to the reduction of the national debt, but including "all the payments made out of the revenue in its progress to the "Exchequer, as well as all payments made from the Exchequer itself." Also, "An account showing on one side the total of that part of the

" public income which is paid into the Exchequer, and showing on " the other side all the payments out of the Exchequer, exclusive of " the sums paid for the reduction of the national debt." "This " account it will be seen is a part only of the preceding, and each " will show the same balance between the income and expenditure " of the year." " But this account being confined to payments into " and out of the Exchequer, and not embracing the payments made " out of the revenue in its progress to the Exchequer, can be prepared at an early period after the end of the financial year."

The forms of accounts proposed by the Select Committee of 1822 have continued in use, with but few changes, up to this time. The national income and expenditure has ever since been entered as the 1822 Committee suggested; and with one exception, the forms in use are the same. One additional account, now forming No. 1 of the series of accounts annually laid before Parliament, was added on Mr. Anderson joining the Treasury in 1854, " in order " to show that which the collection did not previously allow of, " the whole of the receipts and issues of the year at one view." Further, the large deductions formerly made out of revenue in its progress to the Exchequer in payment of expenses of collection,—the net receipts only being shown in the accounts prepared by the 1822 Committee,—have been discontinued; gross receipts being exhibited on the receipt side, and expenses of collection separately shown on the issue side. Various superannuation and other charges, previously paid out of revenue, have been transferred to the annual estimates, or placed on the Consolidated Fund, instead of being deducted out of gross receipts. The percentage rate of collection for the several branches of revenue, which the 1822 Committee proposed, has of late years been left out of the published accounts. The annual accounts, however, instead of being ready shortly after the close of the financial year, as the 1822 Committee proposed, are now usually laid before Parliament only in June. In 1832, an appropriation audit of the accounts of the navy by the Commissioners of Audit, and in 1844 to 1846 a like audit of those of the army, ordnance, and commissariat was established. The Commissioners, however, merely certify how far expenditure for these branches agrees with the sums voted by the House of Commons under each vote; the great importance of making this audit effectual by distinguishing under separate votes the amounts to be applied to the several purposes for which moneys are so voted, will be seen by reference to the Reports of the Select Committee on Public Moneys and Miscellaneous Expenditure. These audited accounts are prepared and laid before Parliament about thirteen months after the close of the year to which they refer.

This movement towards an appropriation audit of a very restricted nature, by an independent authority, begun in 1832, enlarged in 1844, and since partially applied to a few accounts, has at length been proposed to be extended, and will, on the Exchequer and Audit Departments Bill being passed, be applied (it is hoped) to all branches of receipt and expenditure of all services; but, as the audited accounts of the army and navy have not hitherto been used in any combined compilation, and are, merely isolated accounts presented to Parliament, and very rarely even matured, it would appear, that up to this date the only consolidated national accounts we possess, are those entered in the finance accounts, according to the forms drawn out in 1822; and the one account which purports to give the most comprehensive and complete view of the national transactions, is the one added in 1854 by Mr. Anderson, and headed "Cash account showing the whole of the financial operations of "the Lords Commissioners of Her Majesty's Treasury, in connec-"tion with the income and expenditure of the United Kingdom."

VII.—*Description of the English Accounts.*

The system on which the public accounting is conducted will be found to be well described in the paper on public accounts, of 9th February, 1829,* by Messrs. Brooksbank and Beltz in the following words: "A merchant considers his account of receipts and disburse-"ments during any year, as belonging to that year; but the accounts "of Government are frequently wanted, as far as they can be "prepared, in two shapes; first, as an account of receipt and "expenditure *within* the year, for the purpose of striking a balance "at the end of the period, as an *account current:* and, secondly, "as an account of the receipt and expenditure, belonging to a "particular year, for the purpose of comparing expenditure with "the estimate for the same year." "It will be obvious, that the "first account, the *account current*, is indispensable, as the founda-"tion of every other account, and as the only correct mode of "striking a balance, though it must include all payments made "*within* the year by the principal and by the imprest accountants, "whether such payments belong to the services of the current year, "or to any former one. The account of the actual disbursements "belonging to any one year, must be liable to alterations, and can "therefore seldom be considered as quite perfect, for additions must "necessarily be made to it on account of all arrears of payments "which may be claimed, but which occasionally do not come in till "several years after they are due." "For ordinary purposes, when "no important changes have occurred in the state of the country "to occasion a considerable variation in the expenditure, the average "of a number of years of the account current must nearly correspond

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* Page 6 of Parliamentary Paper of 1st June, 1829.

"with the average of the *charge account* for those years, and will "probably furnish as correct a criterion for judging of the rate of "expenditure as can be wanted." This committee remarking on further objections urged against the accounts being so rendered, stated (p. 77) that they were "fully aware of the fact adverted "to in these observations," "that the payments *within* the year do "not afford a perfect comparison with the estimate for the year; "yet, we consider, as we have already stated in our prefatory obser- "vations, that a running expenditure, when no material alterations "are occurring, in the public services, and the annual estimates are "nearly the same. The expenditure *in* the year, and *for* the year, "will not vary very considerably; and that, for the purpose of "comparison, either with the estimate or with the expenditure in "the preceding year, such a return may be exceedingly useful," if "indeed the account current of payments *in* the year is to be con- "sidered as useless, and the account of payments *for* the year cannot "be prepared, till the second year afterwards, little or no information "would be obtained that could be of immediate service."

The system of basing the accounts on the payments *within* the year, was more fully urged in the report* of the committee on which Mr. Anderson, of the Treasury, served along with the late Mr. Brooksbank, Sir William Herries, and Mr. Thomas; the decision of the Lords of the Treasury was, by that report, urged to be given as to "what is the right principle upon "which the estimates of the naval and military expenditure to be "laid before Parliament should be computed, and the accounts of "that expenditure kept; whether the sums actually payable *within* "the year, or the debts to be contracted *in* the year, are the "amounts for which provision is to be made in the annual estimates."

The committee expressed their opinion, that "great objections "exist to the practice of obtaining from Parliament grants of "money not required to be disbursed until after the expiration of "the year for which they are voted." The committee considered such a course "to be altogether inconsistent with the design of the "annual estimates," and stated that "the practice of providing in "the estimates for sums payable in the next or succeeding years, "tends moreover, to weaken the control of Parliament over the "public expenditure, by placing funds at the disposal of a depart- "ment, which, not being required for its own immediate expenses, "may be employed for purposes not contemplated by Parliament," and after referring to the reports of previous finance committees, this 1844 Committee quoted an extract from the Report of the 1797 Committee on Finance, "that the most correct mode of voting

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* Dated 7th March, 1844, in Treasury Minutes.

" sums for ordnance use, so far as Parliament is concerned, would " obviously be to make an estimate for the next year; the sums " which are estimated to be likely to be paid within the next year, " and not the debts likely to be incurred in it, as is now done." The 1844 Committee further stated that, " another ground of objec- " tion to the opposite principles on which these estimates have been " prepared, and the accounts of expenditure kept, is that they are " at variance with that which prevails in the most important financial " operations of the country. The accounts of the annual income " of the kingdom are founded on the actual receipts *in* the year; " the account of the annual expenditure for the public debt is an " account of actual payments *in* the year. Many other services are " regulated in the same way." The committee therefore recommended that the " estimates of the military and naval departments " should in future provide only for those expenses which are to be " paid in the year." This, they conceive, was " the most correct " mode of forming an estimate, and the only one indeed susceptible " of general application. It is in accordance with the principle " adopted by the Committee of the House of Commons, appointed " in 1822, to consider the best mode of simplifying the accounts " annually laid before Parliament, the balance-sheet recommended " by that committee, and which has ever since been laid before " Parliament, is simply a classified account current of the actual " receipt and expenditure into and from the Exchequer, within a " definite period of time. The account is closed on the last day of " each quarter. In addition to those for the public dividends, the " charges for salaries, pensions, &c., in short, for all permanent " public expenditure borne on the Consolidated Fund, though they " become due on the quarter days, are necessarily excluded from the " quarters so made up, and are not brought to account until they " are paid in the succeeding quarter." And in accordance with these recommendations the estimates and accounts since rendered have been drawn out to meet this one-sided or Treasury view.

VIII.—*Defects in the English Accounts.*

I now proceed to show that the English accounts are defectively prepared by quoting the evidence of competent witnesses, and enter into the subject in detail, owing to the generally prevailing belief as to the excellent state of our national accounts. In the 1829 " Report " on Public Accounts," the commissioners after stating that the model of the accounts was furnished by the Select Committee appointed in the year 1822, for the purpose of arranging the annual accounts to be laid before Parliament, add " that the annual accounts " however, prepared according to that model, are confined to the " Exchequer issues and receipts. They leave millions unexplained "and unaccounted for in detail." Sir Henry Parnell also, in his work on "Financial Reform," (p. 10 of the 4th edition, 1832) stated, that "the annual accounts that are laid before Parliament, are con-" fined to the Exchequer receipts and issues; they leave millions "unexplained and unaccounted for in detail; they state for "instance, the expenditure of the army, navy, and ordnance, no "further than the gross amount of the issues for each of the "services." Mr. Hoffay, an officer of great and varied experience, acquired in several departments of the public service, recorded an opinion that the "problem of effectively checking the proceedings "of the large administrative departments is still to be solved, and "as its solution involves a total change in our system of accountability and our existing institutions, I suppose we are not prepared "to take the leap."

Mr. Anderson, of the Treasury, with an amount of practical knowledge rarely acquired by any one officer, has given such frequent evidence relative to the great defects in our national accounts, that it is difficult to restrict the extracts from his testimony showing how serious such defects are; but the evidence drawn from the 1856 Report on Public Moneys will alone, suffice for the purpose. Mr. Anderson's description (*vide* Question 1374) of the accounts, is as follows: "Two accounts are annually pre-"sented to Parliament, in which the expenditure for naval and "military services is shown; one is prepared by the Treasury, and "the other is prepared by the departments charged with the detailed "application of the grants." "It is necessary to point out the "distinction between the two accounts. The Treasury account is "simply a cash account, commencing and terminating with the year; "the expenditure side of the account is founded on the credits "granted by the Exchequer within the year of the account." "These credits do not represent the sum finally appropriated to the "service of the year, but merely the amount drawn out to meet the "current payments; as it is impossible to appropriate money at the "time of issue to the year to which it may ultimately become "chargeable. This cash account must necessarily differ from the "final service account in which the actual appropriation of the sums "expended in the year, at home and abroad, is shown."

In reply to Question 1402, Mr. Anderson stated "that there is "in the Exchequer Act a worse evil than the Exchequer credits." "I beg to refer the committee to the 24th clause of the Exchequer "Regulation Act, which lays down the principle upon which the "public accounts shall be prepared." The substance of it is this: "That the public account of expenditure shall be founded upon "Exchequer credits, and not upon actual payments, that is a very "vicious principle; the Treasury account is to be founded upon "assumptions and not upon facts, and the consequence of that is, "as was pointed out in Lord Monteagle's evidence, that the sum of "1,464,000*l.* was issued to the paymaster on the last day of the "quarter, to carry him on for the following week in April, the whole "of which sum was charged in the public account as a sum finally "expended. It is nothing more than shifting the money from the "right hand pocket to the left, and putting it down as so much "spent; that money was not an actual payment, it was nothing "more than an advance of money made on account of the service of "the following year, and therefore I say that to found your account "upon Exchequer credits, which is the consequence of your having "an Exchequer office, really falsifies the public accounts, and renders "the cash account a very imperfect one." "The result of that was "that we had upwards of a million in the account of expenditure "last year, which did not belong to it; but the law requires that the "account shall be made up on that principle, however faulty it may "be."

In reply to Questions 1851 to 1856, Mr. Anderson explained "that the Exchequer credits when drawn from the Exchequer are "charged in the Exchequer accounts as issues for the public service, "and are considered as final issues by the Exchequer, and as so much "money withdrawn from the control of the Exchequer." "But the "Exchequer have no control in the matter; the Act of Parliament is "imperative, they are bound by the 24th clause of the Exchequer "Act, to consider all such issues as payments, and charge them in "the public accounts as such. The Treasury in the balance-sheet "they prepare every quarter, are bound to follow the same principle, "and it is a very faulty one." "When once the Exchequer grants a "credit, that credit must be charged in the accounts as expenditure. "I had frequent conversation with Mr. Brooksbank on that point, "he said it was well considered, and he objected to it, but the Com-"missioners insisted upon credits and not payments."

Further in reply to Questions 1800, 1801, 1818, 1832, 1833, 1835, 3413, 3415, Mr. Anderson added, "that the Treasury are bound to "found their accounts upon the accounts of the Exchequer, and that "is one of the inconveniences I have pointed out. We are obliged, "with every desire to improve our accounts and carry out a system "uniform with that which has been established in the great depart-"ments, to found our accounts upon a false principle, because the law "requires that we shall adapt the Exchequer account as the basis of "our own." "Even these books (exhibiting a complete set), I am "bound to found upon Exchequer credits;" "I am obliged to carry "out that system upon a false principle, because the Act of Parlia-"ment requires that our expenditure shall be founded on credits, "and not upon actual payments, so that the books are perfect, but "the results are not." "The account should not be based upon the "transactions of the Exchequer, but upon the payments of the pay-"master, in order to become really an account of payments." "What I said was not that that transaction was a fiction, but that the "charge of expenditure in the account of the Treasury was a fiction, "as the payment had not been made. It would appear in the account "of one year when it belongs to another." "It would have been far "more correct to found the public accounts upon the payments of the "paymaster than upon the credits of the Exchequer." "It would "be better if all accounts of expenditure were founded upon actual "payments." "The Exchequer account being founded upon credits "and not upon payments, does not show the unexpended balances "on the votes." "The Exchequer account shows the transfer from "the Exchequer to the paymaster, but if the paymaster has not "paid away that money, the Exchequer account would not show "it, whilst the paymaster's would."

The "memorandum on financial control" which, subsequently to the above evidence, was placed before the Committee on Public Moneys, contains complete testimony from the highest source, as to the untruthfulness of Exchequer credits in representing expenditure. A brief extract therefrom as follows, I place before you:—"It will be necessary to alter the principle upon which "the accounts of the public expenditure are now prepared at "the Treasury." "The proposed changes in the mode of issue and "to the principle of charging the expenditure against the grants of "Parliament, founding the charge upon actual payments, and hold-"ing the balances unapplied in the hands of paying officers as "money expended, will remedy those defects, and place the public "accounts altogether on a sound basis." "The substitution of "actual payments for Exchequer credits is a change upon which "depends the truth of the public accounts." But Lord Monteagle in his comments thereon very rightly declared, that this principle, if correct, ought to be extended so that the "expenditure account "will consist of final payments only," "carried down to the very "rank and file of the army and to the seamen of the fleet;" "every "balance in the hands of every pay office must then be dealt with "as forming part of a general balance."

The Select Committee on Public Moneys in their 1857 report, advised Parliament to make various changes in the national accounts, but until this year these recommendations have been mainly neglected; amongst other recommendations the Committee urged that "though by Act (10 Geo. IV, cap. 27) the annual account "was required to be prepared" "according to the actual receipt and "issue of moneys at the Exchequer, and the 24th section of the "Exchequer Act (4 Will. IV, cap. 15) requires that the expenditure "in such account, so far as it relates to Great Britain, shall be made "up from the credits granted by the Exchequer, your committee "are satisfied from the evidence taken before them that the account "of Exchequer credits cannot represent a true account of expenditure; they therefore recommend that the basis of the account "should be the actual payments of the several paymasters to whom "these credits are granted." The report also recommended other measures of importance for the correct statement of the national funds, but few of them have as yet been carried out, though one, the application of the appropriation audit to all services, is now proposed to be extended to all branches of the service, by the Audit Bill at present passing through the House of Commons.

IX.—*Remedies for Defects.*

From the above extracts it is evident that, recognizing the principle that the payments *within* the year are to be viewed as the expenditure of the year, an erroneous construction has been placed on the word "payment," by not regarding it as the final transfer of funds from the possession of Government financial officers to individuals on final vouchers for services rendered; or, if this course could not under our system be carried out, then to have taken the actual funds placed, generally, to the credit of the financial officers to meet such demands, might have been the payments within the year. This construction vitiated the principle that only final payments within the year should become charges of the year, and not mere Exchequer credits, portions of which remain unappropriated in the hands of financial officers at the close of the year, and large amounts remain at the end of the year undrawn in the Exchequer; that is, the credits given by the Treasury to principal accountants on which to obtain funds, have not been used to the extent expected.

If it had been deemed essential to view the money resources of the Government apart from these credits, in other words, to regard these credits as representing Government liabilities to that extent, then another course might have been adopted, which, while preserving the advantage of this view, would yet have held intact the principle that the payments of the year was the actual amount of cash disbursed by Government officers within the year. That course would have been to record the totals of the Exchequer credits on the expenditure side, but to recredit from each cash accountant the unappropriated balances in the hands of all officers to whom credits or advances had been granted. The full measure of the Government liabilities would thereby be known, and the extent to which cleared off within a definite period, viz., the year of account.

I may here notice the Exchequer account laid yearly before Parliament, which Lord Monteagle did not view favourably, and it is difficult to understand the entries in this account. It, however, may be so altered as to admit of the entries being made intelligible, and by a good analysis, it may even be made to serve as a useful check on the credits, drawings, and balances.

But there is also another course open for adoption, and, perhaps, the most suitable under our present forms, it will also commend itself to attention as having the weight of the authority of the Chancellor of the Exchequer, having been proposed, in the memorandum on financial control and recommended in the following words :—" It will be neces- " sary that true accounts should be prepared, in order to give Par- " liament all requisite information as to the progress of revenue and " expenditure of the country." . . . " The first should be a general " account of the public income and expenditure as at present." " The only change proposed in this account is that it should be " founded on actual payments instead of credits. It should be clearly " understood that this account can never be more than a simple " cash account, commencing and terminating within the year. It " cannot be made to represent the expenditure chargeable against " the grants of the year, because at the time of its preparation the " expenditure applicable to the service of the year to which it will " relate will be far from complete. Still, the account will be a very " useful one to Parliament, as it will represent, immediately after the " close of the financial year, the state of the Treasury cash account, " and the receipts and payments, compared with the estimated " amounts in the budgets."

" The second account should embrace the expenditure of the " revenue departments for payments on account of charges of col- " lection and management, and the expenditure on account of the " several services included in the miscellaneous estimates, compared " with the sums granted for such services. This account, like those " for naval and military services, could not be accurately prepared " till several months after the expiration of the year, when all the " payments applicable to the year's service had been accounted " for."

The views set forth in these excellent recommendations, evidently emanating from Mr. Anderson, would suffice to ensure the foundation of correct accounts for the nation, and fully corroborate the soundness of the opinions I have ventured to place before you.

I may pass over the defects in our accounts brought to light, by inquiries since the 1857 Report of the Select Committee on Public Moneys, merely noting that the proceedings of the Select Committee on Miscellaneous Expenditure, contain most valuable evidence that, until the irregularities in estimating, in accounting, and in appropriating unused balances, no real remedies can be applied to ensure good accounting.

X.—*Confusion and Complications from Faulty Mode of Accounting.*

I now proceed to show by recent testimony borne to the untrustworthiness of the national accountancy, in evidence given to the 1866 Select Committee on Public Accounts, that confusion and complication must be the result of incorrect accounting.

Mr. Anderson, Mr. Chisholm, and Mr. Macaulay gave important evidence, which will apply both to the system of accounts hitherto in use, as well as to the modifications proposed to be made in the accounts by the bill now before Parliament. These witnesses showed that the system (based on legislative enactments), of continuing to treat Exchequer credits as final expenditure, neutralizes the advantages gained by classifying the estimates into distinct votes. In truth, the present mode of accounting gives the Administration the power of setting aside the limits assigned by Parliament to expenditure. As regards Parliamentary control over the amounts allotted in the several votes, it is nearly the same as if the sum total of all the credits had been granted in one vote or in one lump sum; indeed it would be preferable so to vote all funds, and then ensure, by means of an independent board, these being expended on the detailed purposes set forth in the separate estimates.

Mr. Chisholm, before the 1866 Select Committee, after explaining the defects in the accounts as kept up to 1822, maintained that "by the forms in use since 1822, the finance accounts, on the other "hand, are really of use. From 1822 up to the present time, the "exact balance-sheets can be got, and the exact accounts of payments "into the Exchequer and of issues out of the Exchequer can be shown. "And as by the finance accounts there is no statement of the actual "payments made by the distributing officers, the payments which "take place in some distant port, say Hong Kong or elsewhere, would "not, supposing the vouchers had not come home, be entered in the "finance accounts. These do show the real state of the case, as far "as the receipts into and issues from the Exchequer are concerned, "but they do not show the payments by distributing officers. They "show the purposes for which the money has been issued, but they "can only show that money has been paid out of the Exchequer "ostensibly for certain objects, and that it is to be appropriated "to these objects." That he "knew not of any instance in which "the money has not been finally applied to the object for which it "was issued and appropriated. It is issued in the first place, to "the Paymaster-General; it goes into his balance, and that iden- "tical sum may be applied to another purpose for the time; but "still, the amount always remains to the credit of that service for

" which it is issued, until it is finally so applied and discharged." It was acknowledged that whilst " this is a matter of account afterwards, it may so happen that the money when issued all goes " into one balance. It is not kept in separate sums, and therefore " you cannot tell how it is applied, and when the accounts are finally " squared, you may find that the whole of an issue made for one vote " has not been expended, whilst a great deal more than the grant for " another vote has been expended." " In that case the finance " accounts will not show to what objects the issues which have been " made for the votes have been applied, but it was apprehended that " it is the principal object of this bill to supply this deficiency by " supplemental accounts of appropriation audit."

It was maintained, however, that " the insertion of the words in " the clause to show the services or votes on account of which the issues " may be authorised shall be set forth in such orders," was of use, as it is known that the sums so issued can be appropriated and placed to the credit of those services. They are issued intentionally for those services. It was stated to be the main object of this bill " to make " provision for the keeping of accounts, to show with respect to " each vote on one side the amount granted by Parliament, and also " the amount issued for that purpose, and on the other side to show " the actual appropriation of that money." " That has never been " done with regard to the civil service votes." " But that has reference to the appropriation audit." When asked why—seeing that even when passed, that is, when money is issued under these orders, as to the mention of the services or votes, you cannot tell to which vote it is applied—why go through the form of stating on the order to what vote it is to be applied, the reply was, that " without " that you cannot have any expenditure accounts at all. That is " to say, unless the particular service is so stated upon which to " base the accounts of expenditure, no complete account of expenditure can be made out till many months after the expiration of the " year or quarter to which they relate, and that he (Mr. Chisholm) " did not see how any balance-sheet at all could be made out." It was admitted by Mr. Chisholm that, " supposing an order " for an issue from the Exchequer to the Paymaster-General of " 10,000*l.* upon the Poor Law Account, and of 1,000*l.* upon the " Secret Service Account or some Foreign Service Account, and " supposing that a bill much exceeding the 1,000*l.* comes in for " payment, and that much less than 10,000*l.* is required on the poor " vote, then the Paymaster-General uses the balance of the 10,000*l.* " to meet the excess over the 1,000*l.*, whatever it may be, retaining " the balance he has received on account of the poor law, so that " the Paymaster-General does not always apply the exact sum issued " under the order at that time."

Mr. Anderson explained, "that when the Paymaster-General "overpays from a vote in the manner above stated, he immediately "applies to the Treasury for a credit to put the balance of that "account right; therefore, he may possibly pay upon a vote to-day "upon which an issue has not been made, but, in that case, he "will get an issue to-morrow for that vote. The moment a vote "is overdrawn, he applies to the Treasury for an order upon it. The "consequence is, that the payments by the Paymaster-General, and "the issues to him on the votes to enable him to make those payments, approximate as nearly as possible." "The Treasury have "returns from the Paymaster-General every month, showing the "state of every vote, and of the cash he holds applicable to every "vote of Parliament; and the moment the Treasury see that one "is overdrawn, an issue is made to set it right." In reply to the objection that "in case of a payment abroad, not known till long "after it has been made, the return would make out that money "out of the vote has not been expended at all, while, in fact, more "than the balance appearing in the returns has been expended "abroad. Whenever that occurs, the account is laid before Parliament, and a vote is taken to make it good." And in reply to the remark that "this must be done afterwards, when the appropriation audit has been terminated, and that it will not be known "before," Mr. Anderson stated that "it will be known before, "because any payment made abroad must ultimately come out of "the Paymaster's fund, though the advance is made, in the first "instance, out of the funds in the Treasury chest; the words requiring the insertion of the services for which the issues from the "Exchequer were made were intended to meet the existing Act of "Parliament, which requires that the account of income and expenditure shall be founded on the Exchequer issues."

Sir W. Dunbar, the present head of the Audit Board, then pointed out "that the present system is one of special credits." "The "Treasury makes its requisition upon the Controller of the "Exchequer for each separate service, and the Controller makes "the issue, if he finds that the credit is demanded legally, for "a specific amount of each separate service with appropriation." "But under this Bill there is a power given to the Treasury to "which attention may be called. By the 12th clause, taken in "connection with the later clauses (14, 15, 16 and 17), the credit "which the Treasury is entitled to demand from the Controller "of the Exchequer, is a credit limited only by the amount of the "ways and means, and the charges on the Consolidated Fund. "The Treasury is empowered especially by the 17th clause, to demand "in one credit the whole amount of the ways and means granted by "Parliament. It may also happen that 15,000,000*l.* or 20,000,000*l.*,

" or more, may be asked for in one credit; whereas, at the time that " credit is granted, there may be in the Exchequer a balance falling " short of the amount of the credit. That was the point to which the " attention of the committee was directed. It is the effect of several " clauses taken together, but particularly of the 17th clause." It was the opinion of Sir W. Dunbar, that "it was objectionable in principle " and practice that the Controller should be required to grant a credit " exceeding the balance in his account; for example, that the Treasury " should have authority to operate upon a credit for 20,000,000*l.*, when " there may be only 5,000,000*l.* at the Bank." He also stated that " he believed the Treasury have the power of drawing out each vote " separately, and dealing with the money as suggested; but that is a " power which they never could exercise, and, of course, it was never " contemplated by Parliament, that it would be a difficult operation " at the present moment, as the Controller would not grant a credit " in excess of his balance at the Bank."

Mr. Macaulay also stated, that "if, immediately after the passing " of the Appropriation Act, there should happen to be, by any accident, " in the Exchequer money enough to meet the whole of the grants " voted by Parliament, say 70,000,000*l.*, the Treasury might, at the " present time, draw the whole of it out the day after the Act was " passed and place it in the Pay Office." Mr. Anderson explained " that the present Exchequer Act provides that the accounts of " the income and expenditure upon which the surplus revenue is " calculated, for the reduction of debt, shall be founded upon credits " granted, and therefore, every credit granted must be assigned to " the vote. That the words used in the 17th clause of the bill, " requiring that the services or votes, on account of which the issues " from the Exchequer may be authorised, shall be set forth in " such orders, are therefore absolutely necessary to enable the " Treasury to prepare certain accounts required by Act of Parliament."

Mr. Macaulay apprehended that "the object of this provision is, " to enable the Treasury to prepare certain accounts required by "Act of Parliament," and "to enable Government to lay before Parliament those accounts which are known by the name of finance accounts;" Mr. Anderson added, that " these are very important accounts; they are the balance-sheets which are laid before Parliament every quarter." "That those words in the 17th clause ' have reference to the issue from the Exchequer account, and not " to the payments in the Paymaster-General's account." "And the " Act requires that these accounts of expenditure should be made " use of, from those Exchequer issues, and not from the Paymaster-" General's payments; therefore the Treasury must assign them to " the votes." " But although the Paymaster-General may use the

" money as one fund, he holds the balance issued for a particular " service, as applicable to that service; it is a mere matter of " account." And Mr. Chisholm added, that " if the Paymaster-" General uses the money for another purpose, it will be merely an " advance. The purpose for which it is issued will be the purpose " for which it is to be finally appropriated; and it will also be appro-" priated in his books. It is only by that means that he can keep " his accounts of public expenditure under the separate heads, and " give also to the Controller and Auditor-General the materials " by which his accounts are to be checked."

Mr. Anderson explained that " though the Act which requires " that the Exchequer credits be taken as the basis of the expenditure, " as now entered in the finance accounts, is proposed to be repealed " by the bill, yet, that of this Act, known as the Exchequer Act " of 1834, all the provisions referring to these credits are re-enacted " in the bill, because they affect a great many financial operations, " such as the calculations of the surplus revenue, and its applica-" tion to the debt," further adding, " that they are obliged to insert " in the bill the words requiring the credit of the Exchequer issues " to be given to the different votes."

The question was then raised by the select committee, " whether " there be any other system upon which the accounts of expenditure " could be prepared, and which would be better, or as good as the " system of founding them upon the Exchequer credits." And Mr. Anderson stated that " the law might be altered, by saying " that they shall be founded upon the payments of the Paymaster-" General, instead of upon the issues of the Exchequer, but he " doubted whether Parliament would ever agree to that, because " it would delay the accounts to such a late period."

The select committee then specially called on Mr. Macaulay for his opinion, and as this officer's evidence is applicable to the past as well as the proposed system of national accounting, and as he has had long experience, with matured knowledge well tried by examinations before select committees, his testimony as to the dependence to be placed on the accounts, is peculiarly valuable. It is also the more useful from being given from a point of view differing from that which the officers of the Treasury very naturally, though one-sidedly, look at these measures. Being called on to state whether he agreed in the views expressed by Mr. Anderson and Mr. Chisholm, he replied, " that he quite " agreed in this, that if any accounts of the transactions of the " Government are to be laid before Parliament, at the dates at " which the finance accounts are laid before Parliament, the accounts " must be prepared upon the plan on which the finance accounts " are now prepared, and upon no other plan; and if he objects to

" the finance accounts at all, it is because he thinks the heading " of the accounts is calculated to mislead members." " It is stated " to relate to 'income and expenditure,' but it is not what is " properly understood to be expenditure, that is embraced in these " accounts; there may be instances in which it is so, but as a " general rule it is not, and it cannot be. In point of fact, the " finance account is whatever the Treasury may choose to make it. " He added that he did not in the least degree mean to say that the " Treasury do not draw upon the votes, so as to accommodate very " fairly the relation between the drafts and the probable expenditure; but the Treasury is under no obligation to do this; they " might if they pleased, draw upon the votes in succession, beginning " with Vote No. 1, and going right through to the end; and in " that case the finance accounts at the termination of the first " quarter would show that the first forty votes were altogether " exhausted, and that the other votes had not been drawn upon " at all. The finance accounts, it must be borne in mind, exhibited " nothing else but issues and credits." The only thing he would suggest is, that the " heading of the accounts should be varied, and " that it should be 'the Account of the Receipts of Revenues, and " 'Issues from the Exchequer.'" " It is not an account even " approximately, at least it is not known to be so, of expenditure."

He gave as an instance, which will show in the plainest manner how the matter stands, that " the finance accounts of last year were " laid upon the table of the House, he believed in the month of " April; that is to say, the finance accounts, purporting to show " the income and expenditure of the financial year, terminating on " the 31st March preceding, were laid upon the table of the House " of Commons about the end of the following month. But that " account purports to show the expenditure on account of the army, " whereas, the War Office does not know its expenditure, until " a year afterwards." " The account purports to show the issues. " He did not deny that the account may be a useful one, but he " thought it very advisable that it should not state itself to be what " it really is not—an account of income and expenditure—but that " it should be called an account of income and issues."

Mr. Anderson here pointed out, that this is the title of the account. "An account of the gross public income of the United " Kingdom of Great Britain and Ireland, in the year ending 30th " June, 1864, 30th September, 1864, 31st December, 1864, and 31st " March, 1865, and of the actual issues within the same periods." " These issues are Exchequer issues." Mr. Macaulay again stated, that he "referred to that which is the material account, that is to " say, the account which shows all the issues in respect of the votes, " viz., the general account at the beginning." This account is entitled, "cash account, showing the whole of the financial operations of the Lords Commissioners of Her Majesty's Treasury, "in connection with the income and expenditure of the United "Kingdom, between the 1st day of April, 1864, and the 31st March, "1865." "It is called the cash account, and relates to the financial "operations in connection with the income and expenditure." "He "did not think it purports to be an accurate account of every sum "that has been spent." He did not, of course, mean that "it is "framed with the view of doing so, but, undoubtedly, members are "habitually misled by it." He had been asked many times (and he was sure members of Parliament would bear him out in that) "how "is it, that you get this account of expenditure so soon as you do?" "He did not in the least mean to say, that persons who have "studied the subject, would suppose that it is any account of expenditure, but he thought it was apt to mislead." "No doubt," he added, "if Parliament requires it, the Commissioners of Audit "might always make up an account of the votes which are charged "with particular sums. They can always do that, but his point is, "not that this is an undesirable account to have, but that the title "of it is calculated to mislead. That account may be anything "the Treasury may choose to make it. For instance, supposing the "expenditure on a given service were rather more than it ought to "be, the Treasury would not draw upon the vote for that service, "which would supply the service by money derived from other "sources, so that, in point of fact, the account of expenditure in "respect to that service would be exactly what the Treasury might "choose to make it."

The select committee endeavoured to elicit evidence on the complications in the accounting, and in answer to the question "whether the deception which the Treasury, if so disposed, might "practise on Parliament, by drawing upon certain popular votes, "and spending the money on unpopular votes, must ultimately be "discovered?" Mr. Macaulay replied, "Certainly;" and when called on to suggest any means of preventing the Treasury from following that system if so minded, he stated that "he did not think "the Treasury could possibly be prevented from doing it, so long as "credits are dealt with in the same manner as they are in this "account." He did not suppose "that the Treasury would (indeed, it would be very foolish of them if they did) misrepresent one quarter's account, because they would be found out in "next quarter's account, or the following. The case," Mr. Macaulay said, "is something of this kind:—supposing public opinion were "excited about the expenditure in respect to some particular "service, and the Government were called on at any moment to lay "before Parliament a statement of what, during a given term, had "been spent on that service, the Treasury might, if they based their "statements on Exchequer issues, make it whatever they pleased;" reiterating his opinion, "that he did not think it possible to prevent "their doing so." Mr. Anderson then added, that he "did not "quite agree with Mr. Macaulay in that, because the regulations "under which the issues are made restrict the Treasury very much "more than Mr. Macaulay supposes. Take, for instance, this first "amount of expenditure in the finance accounts; a sum amounting "to rather more than 26,000,000*l.* goes for the debt. All that "money is issued to the Bank of England to pay the debt. The "Treasury cannot issue less than the amount of the dividends which "are due, nor issue more; there would be no object in issuing "more, and in fact they cannot do so. The next item of expen-"diture is, the charges upon the consolidated fund; they are all "defined, and the auditors would be able to find out immediately if "too much were issued. Independently of that, the Treasury has "no object in doing so. The only case in which the observation "would apply, is in reference to the army, navy, and civil services; "and with regard to those issues, the Treasury makes them upon "the application of the officers entrusted with the duty of making "the payments. The Paymaster-General receives from the War "Office a return of the different demands and orders which he has "to pay. Upon those orders he shapes his applications to the "Treasury for credits, and it is upon those applications that the "Treasury make the issues. The Treasury have no discretion in "the matter; all that the Treasury does is, when the Paymaster-"General applies under a particular vote for money, to see that "there is money on the vote to give him. If there were not, the "Treasury would call upon the department entrusted with the "expenditure to show the cause of the excess that had taken place. "Therefore the Treasury has no object whatever in cooking the "accounts, if he might so express himself."

Mr. Macaulay declared that he "did not for a moment mean to "say that they actually cooked the accounts."

Mr. Anderson reiterated, "that the Treasury makes no issues, "except upon the application of other persons." "He thought it a "great advantage to be able to lay before the Government every "week, or any day, if necessary, an exact statement of the funds at "disposal in the Exchequer."

Mr. Macaulay observed "that he had no objection at all to the "way in which the point was put, in the question just addressed to "Mr. Anderson. He did not object to the account as an approxi-"mate statement of the issues for expenditure, but having seen, "since he had been at the Audit Office, so many instances in which "members of the House of Commons have been puzzled with that "account in consequence of the heading, he thought it desirable to "make an alteration."

XI.—*Summary of Complications, Defects, and Remedies.*

These views of officers of large experience fully show how inadequate the statements submitted to Parliament are, to supply a correct account of the expenditure of the country, and how ineffectual they must prove as a means of control over executive officers. What is wanted is not to supersede these documents, which may be useful in giving, at an early date, an approximate idea of the expenditure of the year, but to supplement them by an account of actual transactions, to be used as an effectual instrument of control and check, besides affording the people that insight into the financial affairs of the nation by which alone they can feel satisfied that the demands of the Government, when bringing forward the annual budget, are based on an accurate knowledge of the past and a just appreciation of ensuing expenditure.

The above evidence shows that the national accounts of the kingdom, as at present rendered, are based upon forms and instructions drawn out in 1797 and 1822 by select committees of the House of Commons, that the Exchequer receipts, and Exchequer credits granted to principal accountants, are, by Act of Parliament, declared to be the year's receipts and expenditure of the United Kingdom. The evidence of Mr. Anderson in 1856, before the Select Committee on Public Moneys, showed that he viewed the whole system of making expenditure depend on Exchequer credits instead of on actual payments, to be vicious in principle; nevertheless, an examination of the evidence given recently before the 1866 Select Committee of the House of Commons, on the Bill now passing through Parliament, will show that the Exchequer credits will continue to be taken as the expenditure of the nation, instead of the actual issues by the principal accountants. As this practice was established mainly to allow of an account being promptly laid before Parliament, the delays now about to be caused deserve attention.

The new bill only requires the Treasury to prepare this important finance account, "on or before the 30th September in "every year, showing the issues made from the consolidated fund "in the financial year ended on the 31st March preceding, for the "interest and management of the public funded and unfunded "debt, for the civil list, and all other issues in the financial year, for "services charged directly on the said fund." "That such account "shall be laid before the House of Commons by the Treasury, on "or before the 31st of January, in the following year, if Parlia-"ment be then sitting, and if not sitting, then within one week after "Parliament shall be next assembled."

The most important arguments urged by the 1822 Select Committee, and ever since, in favour of making the national account of income depend on the actual money receipts by the Exchequer, and the expenditure depend on the Exchequer credits, was, that "the new "form of account of expenditure, by being so confined to payments "into and out of the Exchequer, can be prepared, at a very early "period after the end of the official year, and will be presented to Par-"liament at the commencement of each session." From an examination of "Hansard," I find that the Chancellor of the Exchequer, when moving for the appointment of the 1822 Select Committee, stated, that "besides the duty of this committee, as regards sim-"plifying the accounts annually laid before the House of Commons, "he had also the further object for the committee, of arranging "for the national accounts being made up at the earliest possible "period," and according to Mr. Anderson's evidence before the Committee on Miscellaneous Expenditure, "the present limit is "three months after the expiration of the financial year." This limit is, under the new bill, to be greatly extended.

We have thus the national accounts based on a faulty system, in order to allow of their early submission to Parliament; and yet the date fixed by the present bill, for their future submission, is extended to a period of the year when Parliament is usually prorogued; the accounts of the year will not be available to the House of Commons till eleven months after the official or financial year has closed. That this delay will arise, no one, who has any experience of official duties can doubt. The officers will avail themselves of the limit allowed by law for compiling these accounts; even when asked to expedite their preparation, they will, as has been done in like cases, reply, that the legal period for rendering them has not yet arrived. The question, therefore, arises, whether the practical exactness of the French system, even with the delay said to be involved, is not superior to our inaccurate accounting, with the delay which is now to be allowed. We are extending the time for presenting, without effecting any improvement in the quality or character of, the accounts, and yet the little practical use of these accounts, even in their present form, is shown by Mr. Anderson's reply to Question 443 in the Inquiry into the Miscellaneous Expenditure, when he stated, "I do not think there is much in these "accounts that is required for that purpose [as a check upon "estimates], the use of them is principally as a matter of record as "to revenue, and the various other details as to taxation." As already suggested, retain the present finance forms as early approximate statements, but supplement them by accounts of actual payments by the Paymaster-General, in preference by a final account of actual audited expenditure, to be laid before Parliament at the earliest practicable date after the close of the year; this need never exceed twelve months; but a cash or treasury account of actual incomings and outgoings could be supplied monthly, and would be useful as a cash account.

It will be convenient to contrast the details of one French department with one of our departments. I select for comparison the War Departments of the two countries; premising that, as financial uniformity exists in all French departments, it necessarily enforces stability in the arrangement of budgets and accounts, whereas each English department, by conducting its financial duties mainly on its own rules, makes such changes as they see fit. Now, up to the amalgamation of the ordnance services of this country with those of the infantry and cavalry, in 1856-57, the headings and forms used for the estimates and accounts of these separate services were uniform for most of the years between 1832-33 and 1856-57. Since 1856-57, so many changes have been made in the headings and forms, that it is impossible to classify the budget and accounts under heads common to more than two or three of the past ten years. The naval estimates and accounts have continued to be drawn out on a more uniform system, and the classification of the entries for a series of years is more easily made; but even in this branch changes which are objectionable, because they destroy the link, have taken place. The budgets of accounts of France are in great contrast. The figures under the minor and major heads can be easily taken out and arranged in tables for a long series of years.

The classification in the main heads of the appropriation account of the year must necessarily follow those in the yearly Appropriation Act. The Commissioners of Audit in certifying to the amounts expended by each of the two great services, compare the total sums expended under each vote, with the amounts under the heads specified in the Appropriation Act. It might have been expected that some degree of uniformity in the designations would have been secured by this examination; but the Audit Board having only had the duty of contrasting the one year's expenditure under each head with the sums voted by the House for that one year, little connection has existed between the headings of that one year, with those of any other previous year, and even where the nomenclature may be the same, the detailed services under these heads are so dissimilar as to vitiate all comparison.

A Treasury minute of 8th September, 1846, directed, that "in "order to afford to the House of Commons every facility for con-"trasting the estimates of the prospective year with the rates for "the past year, it is very desirable that the classification of the "expenses should be subject to as little variation as possible. Their "Lordships therefore direct that no alteration in the present classifi-

"cation of the services to the army, navy, and ordnance estimates "shall be made without having been previously submitted to and "sanctioned by this board." There are many resolutions of the House of Commons, Treasury orders, suggestions from select committees, containing most excellent instructions for the preparation of estimates and accounts, all or most of which have been, as the above, disregarded by the departments of the State.

There is also one evil resulting from the English changes, to which I specially call attention. It is a defect which our colleague, Dr. Farr, has already brought to notice, in one of the reports addressed by him to the Statistical Congress of Paris. It is the impossibility of using the statistical arrangement of the figures in the estimates and accounts as a check on the expenditure. Now, having practically employed the statistical check in controlling the military expenditure of our Indian empire, I cannot but express my entire concurrence in the opinion which Dr. Farr has given of its great utility. The detailed headings of a complete set of budgets and of accounts uniformly classified during a series of years—if indicating services of a uniform character—afford, by the statistical arrangement, the means of judging as to the accounting accuracy, and the figured entries enable us to judge as to the economy, or otherwise, with which the services are carried on. The French have set us an example worthy of our attention; from their collection of budgets and accounts the information therein could be abstracted into one sheet, with columns for each year, and under heads in use at the present time, very closely the same as those employed twenty years previously.

XII.—*Differences in Details between English and French Accounts.*

There are some differences in the accountancy of France and England, attended with important results. The periods for opening and closing the yearly accounting of the two countries, vary considerably. The French financial year is the same as the calendar year, and facilitates the opening and closing of many transactions of civil and official life, whereas our financial year ends 31st March, whilst many transactions, from their nature, must close, as in France, with the 31st December. The French year's accounts comprise all payments in complete settlement of all liabilities incurred within the year to which the account belongs. To this end, the period over which money payments may be made, is extended beyond the year *within* which the liability arises. This extension of the term of payment has varied at different times, and of late years has been narrowed. At present, the period beyond the year, within which these payments may be made, is fixed up to 31st August of the year following that in which the liability arises; the time for ordering payment is restricted to the 31st July; the extra month up to 31st August being allowed for the claims, so ordered, being paid. But, practically, the limit of payment is still further curtailed in France, for though, in theory, each minister is the authority for authorizing payments to be made on final bills, yet, in practice, the ministers, as in the War Department, delegate to the intendants-general of the military division the power of ordering expenses to be paid. The minister of war, however, restricts the operation of this power to the delegated authority up to the last day, inclusive, of the fifth month of the year (31st May) which follows the period to which the year of service belongs; the payments on these orders are also restricted to within the sixth month; all orders not paid on or before that date are annulled, and the payment can only be made with the authority of the finance minister.

This arrangement is one that has been partially tried in this country, in respect to the ordnance accounts. Its failure was, however, owing partly to defective audit, but mainly to the impossibility of adapting the system of accounts to suit the convenience of the Treasury, the special duty of which, apart from that of general control, is one solely involving cash transactions within the year. The system of keeping the accounts of expenditure designated in the Report of the 1829 Commissioners as the "charge of the year," or, as I have termed it, the cost of the service of the year, was set aside in favour of the one now in force, "of payments within "the year." There is much to be said on both sides of the question. It is right that the Government should be acquainted with the probable cash demands on the Exchequer within the year, and all estimates should keep this object in view. But in order to ensure accuracy in ascertaining the real liabilities incurred within the year, for statistical purposes, for a right appreciation of the disturbing effects of warfare, or for the financial effect of any convulsion, or any unusual condition of things, it is essential to represent the "charge of the year," that is, the expenditure truly appertaining to any one particular year and to every year *per se*. If a system, therefore, could be devised (and it is quite feasible), which would combine both the Treasury and departmental objects, it would be a great gain.

The French accounts afford the means of solving the problem, and justly deserve our attention; the issue of money in payment of the liability, or charge of the year, is very carefully guarded by clear and distinct rules, from those abuses to which the system of defraying the cost of the year's liability, after the close of the year in which incurred, is open. The limitation of the use to which budgetary credits can be applied, in payment of claims, is one of the checks, but the greatest of all is the clearness and fulness with which the whole of the expected liabilities or charges of the year are set forth in the budget, showing, when services are performed, whether their cost was anticipated. The necessity imposed on all departments of France of drawing out during the year twelve estimates of the monthly funds required to meet the payments falling due in each month, under each of the minor heads of the budgets, furnish another protection against a misapplication of credits, and afford timely warning that the budget amounts are not adhered to, or are insufficient. The services, in payment of which these funds are to be applied, must also be proved to have been actually performed, not after, but within, that year; the cost of those services being fully established on settled data, these justify the payment of the claim, if made within the six or eight months after the close of the year. Indeed so fully must any system of accounting for liabilities incurred within a defined period provide for the payment of each liability being clearly shown, that in a very valuable memorandum, dated 27th March, 1854,* Mr. Anderson stated, "the votes of "Parliament are granted not only for distinct services but for "distinct periods; thus, misappropriation may take place either by "applying the money voted for one service to defray the charge "for a different service, or by appropriating the surplus of a particular service for one year to the same service for a subsequent "year." The entries in our accounts are, therefore, not true representatives of the facts. This very sound rule, if rightly applied, would practically establish the French system of paying for the liability incurred within a fixed period, and show the cost in the account of the year to which the service belongs.

Then again, as to the payments for stores, or supplies of provisions and war material, in the control of which we entirely fail, the French require that the purchase of all these supplies, in quantities and kinds, should agree with the budget entries, and be proved to have been ordered, and delivery made, within the year or within the first two months after the year has closed, in order to justify the payments being legally charged on the sums provided in the expired year's budget. So exactly are the store accounts of French departments kept, that the value of stores purchased within any year, may be, and is, with rare exceptions, debited to the account of the year in which consumed. If in excess of the year's consumption, the accounts are so admirably arranged as to allow the cost of the surplus to be carried over to the next year's account. But then the separate account of the value of assets kept in France, but not in England, facilitates this accounting. Other conditions exist for bringing all the charges or liabilities of the French budgetary year to an exact settlement within eight months after the close of the year; the practical bearing which final payments have on their prompt settlement, is one means. The most important is, to discourage all imprests or advances in anticipation of services being performed, and, when unavoidable, to restrict the few advances within the narrowest limits, to specially named cases, for a few stated services. The proportions to be advanced, the purposes for which authorised, the time during which such outstandings may remain unsettled, are laid down by imperial decree, and the rules enforced with great strictness.

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* Appendix I of "Report on Public Moneys Paid," par. 7, p. 558.

The practical result of guarding against advances is that, with few exceptions, no moneys are drawn from the Treasury until required in full settlement of claims. Moreover, even the advances are arranged to be adjusted within the period for closing the accounts of the year. Accounts are thereby based on completed transactions; the enforcement of this kind of accounting causes the charges or liabilities of the year to be promptly presented for examination; it also entails on the Government the duty of promptly paying claims; the final payments within the year must necessarily approximate to the amount of the liabilities incurred; and by agreeing closely with the actual cash issues, under the cash account of the Treasury, a close approach to the charge of the year.

The English system of accounting is in marked contrast with that of France; the financial year ends with the 31st March, and therefore differs from the French year of account, and also from the calendar year. The money receipts and the money payments within that financial year, are the data from which theoretically our accounts are prepared. But here again, there is a distinction of a peculiar character between these two kinds of data, and, at the risk of repetition, I must again bring the differences to notice, believing that it is the cause of all our false accounting.

The actual moneys placed to the credit of the Exchequer *within* the year, form the receipt side of the national accounts, whereas it is merely the credits given from the Exchequer *within* the year that form the expenditure side; but the Exchequer may not be drawn on to the fullest extent authorized by the credits, or if drawn on by the principal accountants to whom the credits are given, yet all the moneys so obtained may not be paid away *within* the financial year; or, as shown above, even if paid away, yet not for the services for which the credits were granted. These unissued and unused balances, remaining at the end of the year, ought consistently with the English theoretical system, to be re-surrendered, but the practice is not uniformly enforced for all departments. The English system erroneously regards only the money view of the question and ignores the service aspect; the French consider and respect both views, and have the good from both. However great may be our outstanding liabilities or charges for services performed within the closed year, though incurred on the authority of the budget, their exact cost ascertained and admitted, still, if the final bill containing the claim has not been actually paid before the last day of the official year (31st March), the money due by the State for the incurred liabilities cannot be defrayed out of these unexpended balances, nor out of any sums granted by Parliament for the service of the year to which these liabilities or charges belong. The payment for these liabilities must be deferred till the year following, and defrayed out of moneys appropriated for that new year's services, even if the budget of the new year has not provided for their payment; the money so expended being charged against the year in which paid, instead of, as in France, against the year in which the debt was incurred.

This practice of rigorously excluding the payment of moneys due for the year's charges or liabilities from being paid out of the available moneys granted for their liquidation, and throwing the one year's charges on the moneys provided for defraying the liabilities perhaps of a different kind in a year for which they were not incurred, and against a budget which did not anticipate or provide for the service, brings on another evil: it leads to large advances being made to, and by, principal accountants to a great number of sub-accountants, to enable them to anticipate claims for payment and to make advances for services to be performed. Now all experience proves that advances create laxity in applying for a final settlement of an account; there is abundant testimony on record to show how very objectionable the system of advances to an army of sub-accounts has been viewed by those financiers who have discussed this great blemish in our system. The theory is, that these unused advances are surrendered, as moneys not required for the settlement of services performed within the year, but practically this surrender does not and cannot take place; the unemployed money balances at the end of the year are retained for carrying on the service of the new year. I have never seen any statement of balances in the hands of sub-accountants, and that it is even difficult to make out the balances to the credit of the Paymaster-General.

All this complexity of receiving or crediting, and paying back, or re-crediting, is the result of having no fixed standard by which to regulate the settlement of claims for services actually rendered within the year. The only safe standard is that of paying for services performed; these involve liabilities just as much as the merchant's acceptance of a bill of exchange; both must be liquidated when due. In respect to the Government debts for rendered services, the sooner these are cleared off the better, delay does not lessen the amount to be paid; on the contrary, delay only increases the difficulty of ascertaining the nature, extent, and cost of the claim, and the money being due generally on the service being rendered, the delay in payment induces a desire to add to the claim.

XIII.—*Advantages of Basing Accounts on Payments for Services of the Year, instead of on Payments within the Year.*

The French system of permitting services of the year to be paid for within a limited period after the year closes, necessarily provides for income and expenditure being kept distinct for each year, in order to strike a balance between the transactions of each year. The nature of this operation appears to require the separate transactions to remain open so long as there are any taxes due to the State, or money to be obtained by the parties who have performed services for the State; in fact, to remain always open, owing to the apparent difficulty of ever finally adjusting those outstandings. The insufficiency of the eight months' limitation for these accounts to be adjusted, necessarily causes some transactions to be in arrear; and the accounts of France do show recoveries of taxes and payments for services as appertaining to closed accounts of past years, but being clearly stated in subsequent years' accounts as due for previous years, no confusion or derangement in the accounting of France is ever caused thereby, and being small in amount, the efficiency of collectors of taxes and the defraying of debts is thereby fully established.

This system of separately accounting for each year's transactions, originated in the appointment of special treasurers, not purely Government servants, whose interest it was to retain funds in their own hands, therefore to delay as long as possible the final closing of each year's operations. This gave rise to great abuses, the recollection of which lasts to this day; but under the exact method of the French finance system, strictly enforced during the last few years, all persons handling public moneys being now Government servants, this mode of periodical accounting is conducted with marked success, and possesses so many advantages that it well deserves our attention. The accuracy of the budget of anticipated revenue is thereby possible to be verified by a comparison with the actual receipts, and though some of these may be obtained after closing the accounts of the year to which they belong, yet the amounts can be checked by the unrecovered balances of the year for which due. The pressing necessity which accurate accounting imposes for collecting the revenue, causes the actual recoveries for the year to be brought to such a close approximation with the estimated amounts as to allow of a judgment being formed as to the accuracy of the estimate and the diligence of the revenue collectors.

The expense budget is likewise checked by the actual payments, which, being also made over a limited period of time, after the close of the year in which the services were performed, ensures the cost or liability of these services being stated so nearly in full against the estimate of charge, as also in that case to verify the accuracy of the estimates. Here again the great principle of prompt payment of debts, which is a great economy to a Government, comes into full force.

The result is, that two distinct transactions, that of expected *revenue* and *liability*, can be contrasted in the French accounts with the actual amount of money *receipts* and money *payments;* securing not only a thorough test of the accuracy as well as promptness with which the finance business of the nation is conducted by the administrators, but a further gain, for in proportion as a scrutiny of this nature is strictly or loosely carried out, the administrative duties connected with the branches of the service to which these very different transactions belong, may be judged of as to whether due foresight has been exercised. Further, in proportion as the two distinct operations are successfully carried on within the period fixed for collecting the revenues, as estimated, and settling and paying the claims, as authorised by the budget, so may an opinion be formed as to how far the executive functionaries have been active in collecting the moneys due by the people, and in closing the claims due for the services rendered. In both cases, the tests will be beneficial. This double standard exists in the French accounts, whilst the English system of confining the accounting to show but one of the two-fold results exhibited in France, viz., that of money receipts and payments *within* the year, deprives the country of a standard by which to appreciate the results attained. But this concealment only exists so far as the published accounts are concerned.

Practically, a full account of each year's transactions must exist, though not published; we constantly hear of income tax, hop duties, &c., being due, though not collected within the year; and, again, we hear of an apparent increase or falling off in the amount of anticipated revenue of a current year, consequent on the actual collections being less or more than calculated in the budget, by reason of taxes remitted in the year previous appearing in the accounts of the following year, of which an account exists though not published. So with respect to expenditure; the money due by the State for services rendered in any one year must be paid at some time or other, and if not amongst the payments of the year in which the debts become due, they will be entered in another year's accounts when paid; and in this case also, an account of these arrears must exist, though not made public. The result is, that though some accounts are published in England, only those initiated into the office secrets can say, if even they can do so with precision, what portion of the receipts are the revenues of the year, and what portion of the payments are in settlement of the expenses incurred for the liabilities or charges of the year.

The two national systems of making up the accounts in the one or single form from the year's actual money receipts and money payments, and in the double form according to the rights established within a fixed period of time, have been more fully discussed in France than in England, but their relative advantages and disadvantages have also in this country been considered. The opinions expressed in both countries as to the merits of the systems will be found to vary with the stand point of view of the respective parties. In a Treasury point of view, from which in England the question has been settled, the cash receipts and cash payments *within* the year have been considered the true and only basis on which the national accounting ought to rest, though even these have not been the real data on which the accounts have been drawn out, owing, as before stated, to the use of Exchequer credits, which the law has ruled shall be treated as equal to money payments.

From an administrative point of view, the making up the accounts according to payments made for liabilities incurred for the service of the year will be preferred, but as the Treasury control in England has in past years always enforced on the administrative departments the accounting arrangements most suitable for the transactions of the Treasury, and as these depend on available cash means, the advantages which the administrators of departments will consider inherent in the complete settlement of each kind of service of the year, so as to aid them in controlling the expenditure as a whole, will be, as is the case, entirely disregarded, and the cash issues entered in the accounts, in preference to the completed payments for the year's liabilities. Whereas, if the ledgers of departments of the State, especially of the army, were opened out to the public, it would be found that, under this system of cash entries, many services are, on the 31st March (the last day of the financial year), paid for in such fragmentary payments, and so irregularly, over a series of years, as to defy all exact knowledge being obtained of the actual expense for the year's services, and in consequence we have hitherto been deprived of that powerful and useful check which the classification of uniform and similar statistical facts for a series of years affords.

Now, there cannot be a doubt, that to know thoroughly what services are rendered to the country during any year, and what moneys ought to be paid for them, are two great essentials for an administrator. The services in general may be well known; but so numerous are the details connected therewith, that the most useful and concentrated means of check, viz., their cost, is not made up, and cannot be ascertained by our mode of accounting.

In the many excellent views and instructions in the reports of commissions, and in regulations which have at different times been issued in this country, and even stated in Acts of Parliament, there are many traces of the existence of the belief that a combination of the knowledge of the two transactions, services performed within the year and their full cost defrayed, cannot be withheld without serious injury to real economy, and to efficiency. Nay, more, when Mr. Anderson was called on by the Committee on Public Moneys to define in words the period over which the accounts of the army and navy extended, he replied that the "navy are allowed eight months " for the preparation of their account; the army, commissariat, and " ordnance have been allowed twelve months, owing to the large " amount of the present expenditure which takes place abroad. " The principle upon which the account is prepared is, that it shall " embrace the whole of the expenditure for these services at home " and abroad within the period of the account. It is, therefore, " necessary to allow time for the receipt of all those accounts from " the most distant stations, for the final examination and audit of " them after they are received, and for the preparation of the annual " balance-sheet for Parliament." And, in answer to other questions, Mr. Anderson replied that Parliament " could have two accounts, " the provisional account of the year, made up as closely as possible " to the termination of the year, and the finally appropriated account " after the whole of the transactions of the year have been com- " pleted." A slight addition to the above words, would make our system identical with that of France, but the practical result shows a great difference, and seriously detrimental to our interests.

The French have succeeded in securing the check which we neglect, and with but little sacrifice as to time; for, whilst the duration or period within which the service must in France be rendered, is maintained to be the time included in the twelve months, and this rule is kept as the standard for regulating the payments, yet, the period for making the payments has been limited without inconvenience to the eight months immediately after the close of the year. The success of the arrangement is proved, in the fact that though arrears are subsequently paid, yet they are small, for after these eight months have expired, all power on the part of the ministers, administrators of departments, to pay away money for previous services, even though the amount is settled as actually performed, and the money claims actually due, ceases; the payment after this period must be specially approved of by the finance minister, before the departmental administrator can obtain the funds. Even then, the finance minister can only approve of such services being paid for, on the proofs which at the close of the eighth month must be sent to him, of the fact of certain specified liabilities or charges then remaining unsettled. Thus it is, that though France has two budgets open—one of the current year, and the other of the year before—yet with this little extension of accounts, they possess the fullest information on the year's services, and their cost.

The argument which has often been used in this country is, that the arrears of former years payable in any current year will be compensated by equal balances of that year remaining unpaid at the end of the year. Now, so long as the circumstances which occur in each year are alike and equal in all respects, that is, the total amounts to be expended, and the services to be performed, the same one year with another, in kind, cost, and extent, the official neglects or activities also uniform through each of these years, and the local distances the same over which the services of the year are spread, then, the balance on one year may equal in amount that of another year, and may bring about equality on the total expended: but then only in so far as the Treasury cash transactions are concerned. The administrative difficulty of having a complete service paid for, partly in one year and partly in another, will still remain; the one total, of the cash of the year, for the whole department, may accidentally harmonize with the separate totals of the actuals, the year's differences also counterbalancing those of other years, but the separate parts into which the administrative services of each branch spread cannot agree, though the differences on some may by chance compensate for the differences on others.

The irregularities observable in the transactions of the only two branches of the service (army and navy) which are susceptible of verification, and of comparison between the amounts in the Treasury account and the cost as stated in the audited account, are due mainly to the mode in which the administrative departments are constrained to deal with the payments for rendered services. Moreover, if the honour of public officials were not so high as it really is, the state of the national accounts, as recently stated before the Public Accounts Committee, could be made to appear just what the Treasury authorities pleased.

But looking at the past, it is undeniable that, it is neither uniformity of expected services one year with another year, nor the integrity of individuals, which ought to be relied on for effecting a right system of accountancy. It is only by a record of facts as they occur, that clearness of accounts can be secured. At present, as the budgets are prepared, a larger appropriation of moneys than can possibly be expended within the year are required and obtained from Parliament for the services entered therein; and as the power of operating on the parliamentary grants is intrusted to the Treasury, and as the voted sums for the different branches of the services can be drawn on as the Treasury pleases, and temporarily applied to other services, it necessarily follows that sums are, at least occasionally, drawn which are not entirely needed, either for the payment of the particular services, or for their payment within the year, and with a view to economise balances, must necessarily be spent, temporarily at least, for other services, not exactly those in the budget, for which the sums were granted by Parliament.

The remedy for the existing great defects in our national accounts, occasioned by the convenience of the Treasury being more studied than that of the administrative departments, would appear to be attainable by a very simple measure. The maintenance of the useful administrative unit, comprising service and cost, uniformly set forth in our budgets and accounts, is not inconsistent with the exhibition of the cash transactions which the Treasury requires for their own duties. To this end, it is only necessary that the House of Commons should have before them the two very different things which these transactions need. The administrative departmental budgets and accounts ought to show the services as to nature, extent, and cost, in the fullest detail, and in the form useful to the administrator; but as the Treasury only exercise control over masses of money required to pay for each part of the services, that department only requires an approximate statement of the monthly lump sums for classes of services, and when expended, to be subsequently accounted for in the detailed accounts of the year, then by making the month, the unit for the accounting period, the year's transactions could easily be completed to suit the views of all departments.

The services completed within the year cannot, from the nature of circumstances, be settled entirely as to cost, and certainly not, as to all payments, within the year; it is therefore, only necessary that provision should be made by Parliament for the moneys being made payable as the payments really do take place, and to distinguish the total amounts payable within the financial year, from those in the year following. The Treasury only require to know monthly amounts in gross, and not in detail, one page of the budget of the year would suffice for recording the requisite entries for this limited information. By limiting the duration of the period for making these after payments, the facility of closing the year's transactions, both as respects those within and beyond the year, will still, as at present, exist, and with a greater extent of accuracy than at present. The addition of a few entries in the present form of finance accounts would enable the Treasury to place before Parliament, as early as promised, the total cash transactions of the year, with the advantage of exhibiting the cash amounts actually paid for the services of each year; and by the harmony which would thus be created between the Treasury and departmental accounts, I have the fullest belief that the former would possess information even greater in degree as to accuracy than is now possible.

The further change, abolishing or narrowing the system of advances, by requiring all fixed services and most of the contingent disbursements to be at once paid on final bills, would, next to the above, if not equal to it, be one of the most important financial reforms which our nation could adopt; a monthly refund of all cash balances with accountants, to the Treasury, would also afford improved means of check.

It may be asked whether the French accounts do show the cash transactions within the year, distinct from those during the after periods within which the operations may be carried on, I reply that the Court of Accounts, in their annual report to the Emperor, set forth the transactions of receipts and payments, both as respects those within the year, and those comprised within the period allowed for closing the departmental books for the service of the year. Appended are two sets of accounts extracted from the Annual Report of the Court of Accounts for 1863, of the cash transactions within that year, from 1st January to 31st December, and the second set shows the actual receipts and actual payments made for the service of the year 1863, including therein those receipts and payments made during the eight months after the close of the year 1863, up to 31st August of the year following.* Those accounts show with what facility the actual money transactions of the year, that is, those between the 1st January and 31st December, can be stated, as well as the transactions for the service of the year, which include the collections and payments made after the 31st December and up to 31st August, for revenues due or liabilities incurred within the year up to 31st December. The imperial decree of the 31st May, 1862, laying down the general rules under which the public accounting should be conducted in all departments of the State, requires that the annual report of the finance administration should comprise five different descriptions of accounts, viz., those connected with the public revenues, with the public expenses, with the Treasury transactions; the budget accounts, and the accounts of miscellaneous public services. And, among the various descriptions of information which these accounts are designed to exhibit, that relating to the actual transactions within the year, and that representing the service of the year, as well as that connected with each branch of the service, must be set forth. An examination of the French published accounts will establish that all this information, and much more, is fully contained therein, thus proving the practicability of maintaining the distinction between the payments within the year, and the charges appertaining to the year. The honest and truthful mode the French set forth their uncovered balances might be a lesson to us to make known as clearly our outstandings.

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* Appendix, Tables II, III, IV, V; pp. 437—440.

XIV.—*The Several Distinctive Budgets in Use in France.*

The second great objection brought against the French finance system arises out of the many designations in use when mention is made of the budget: such as ordinary, extraordinary, roctificatif, definitif, supplemental, complemental, and budgets for order. Now these names are designed to indicate the general purposes for which public moneys are required, or to which they are intended to be applied; the documents so named are the legal official forms which ministers must use on certain occasions, in applying for funds; they are well known and understood by the deputies when called on to vote the public moneys; moreover, they aid in enforcing care on the part of the Government in making demands for money, and are also well calculated to aid in bringing the expenditure, when incurred, to exact account, and under the heads as voted, showing clearly the exact purposes to which every sum was appropriated. The mere fact, then, of a few more technical words being used in the financial phraseology of France than in the technical phraseology of England does not justify the condemnation of the French budgetary divisions; certainly not if, on inquiry, the above important results are found to be obtained by the use thus made of a few extra terms of definition.

Indeed, with such advantages in view, there would be good ground for adopting in our own finance system similar designations, in order, when referring to our financial affairs, to denote as clearly as in their own case French statements do, those various modifications which our budgets so invariably undergo year after year, by additions in the form of extra grants. The conditions defined by the French terms are undoubtedly to be found in the English system to as great an extent as in France, and we might use the exacter language of finance with a hope that the good results stated to have been attained in France by these budgetary divisions might also be secured for our own country.

The different kinds of French budgets may be briefly described as follows: the ordinary budget for the army is invariably presented to the chambers one year prior to the date on which it comes into operation; it is left during the six months of the session open to scrutiny, before the financial law granting the funds to meet the liabilities inserted in the budget is passed by the deputies, generally at the close of the session. This budget for the army provides only for services and expenses on account of the troops stationed in

France and Algiers; these expenses are almost of a permanent character, almost unvarying in nature and in amount, affording year by year but few openings for either great augmentations or great reductions.

The extraordinary budgets provide for the unusual or uncertain expenses, such as those for new works, or special war expenses, besides all those additional services of a temporary nature, which are not of long continuance, nor obligatory on the nation. The budget *rectificatif*, *supplemental*, and *complemental* merely indicate the additional funds to those primarily voted on the two great budgets above named; and designate the time and heads under which voted. The budget *definitif*, is the final, or completed budget, with all charges proposed to be incurred duly entered.

The budgets "for order" are intended to cover receipts and expenses of extra departments, placed under ministerial supervision, also for special purposes, such as are subject to legislative control, though not belonging to the general public service of the nation; these almost always show the special resources which are available for the expenses proposed to be incurred. The expenses so set forth, when the account is completed, are subject to the same useful and strict control, examination, and check as the expenditure which is provided for in the case of the public service budgets.

These divisions of the budgetary charges, define the mode and time for applying for public moneys, and for appropriating them, under well-known heads. They aid, essentially, in narrowing the discussion of expenditure by confining it to the amounts required for those purposes alone which give rise to unusual expenditure in every nation. For instance, during the series of years from 1835 to 1852, the expenditure on our army and navy varied but little in total amount, one year with another; and, contrasted with the total sum now expended on the two services, was, no doubt, from the close scrutiny it then underwent, kept down in a way which, if now attainable, would enable the Chancellor of Exchequer to reduce, probably within his lifetime, a large portion of the national debt. Still, as the whole of the charges, ordinary and extraordinary, during that time for our army and navy were included in one budget for each service, and all parts subjected in the House of Commons to investigation, valuable time was often lost, for, in reality, after voting the strength to be maintained, the greater portion of the charges were formerly a necessity. Still some of the amounts in our budgets, even in those economical years, were extraordinary or unusual; and if, as in France, they had been presented to the House of Commons in separate budgets, that close attention to this essential portion of the budget charges, so justly open to question, both as to policy and economy, such as the French Mexican expedition calls forth, would have been more readily bestowed in our Parliament, and waste of time thereby prevented. But if our heavy budgets for army and navy were even now divided as in France, and the special expenses for reconstruction of our navy, and for fortifications, small arms, and ordnance, shown in separate budgets, economy and efficiency would be found to result from the arrangement, useless discussions prevented, and the Parliamentary control, now of but little effect, might be well applied to those fewer points.

In respect to the estimates for the army and navy, the French proceed on the basis of making their calculations for their ordinary expenditure on a minimum peace establishment, as it would be needed if France had no duties on which to employ the army, other than in France and Algiers, but with *cadres* of regiments so organised as to be capable of great and rapid extension, at the smallest possible outlay, in order to meet the exigencies of sudden war, to which every country in Europe is exposed. Now, though this minimum or peace force has somewhat varied at different times, each of the establishments fixed on during the last few years has, on the whole, been considered to be based on the required economical conditions, yet sufficient for rapid augmentation in strength, as has been practically proved.

The great accuracy already attained in setting forth the cost by an adherence to an almost uniform peace strength, thereby determining, by an uniform statistical arrangement of facts, the charges of this peace establishment, does not prevent a yearly revision. Accordingly I find in every French annual budget a report from the minister of war explanatory of all the variations in the charges contained in his budget, showing the year's charges of the army as proposed, and as compared with the corresponding services and charges of the year preceding, accompanied by statements showing, in the minutest detail, the various sums proposed to be expended for each kind of service, with the budgetary heads divided and subdivided in an uniform way, well calculated to admit of exact statistical contrast with the like divisions in former years' accounts of expenditure. These reports and details are not of an ordinary or routine nature, but are real and substantial representations of the facts; moreover, after being drawn out by administrative officers of the War Office of ability and integrity, held strictly responsible for their acts, these reports are submitted, for the examination of the war minister, and after being signed are sent to the Council of State to be thoroughly scrutinized.

Now this remarkable body is divided into sections, corresponding to each branch of administration, and composed of members specially qualified by former employments, for scrutinizing the affairs of each ministerial branch; it is also well known that the minister of war has, in respect to his budget, actually undergone an examination during several days by that section of the council entrusted with the war branch, and yearly appears before the council to explain the year's budget. The very fact of such a strict course being likely to be followed in respect to the budget of any year, combined with the invariable examination of the year's budget, must have, and has in practice, an effect, in respect to care and accuracy in preparing the budget, most beneficial to the public interests. But again, it cannot too often be stated that the ample and clear explanations on all parts of the ordinary budget, and the uniform nature of the services, facilitate the verification of all the entries.

The budget, having borne the close examination of this experienced council, is then laid before the chamber of deputies, with a report prefixed to all the year's budgets, explanatory of the whole of the financial arrangements of the year, and two of the members of the council are deputed on behalf of Government to sustain or explain the budgetary charges before the chambers. A committee of deputies is further appointed to examine and report on the proposals in the budgets, the deputy named as reporter to the committee being usually selected for his knowledge of financial affairs. Thus aided by these practical and useful investigations, the chambers decide as to the amount to be passed for each of the services, and though furnished with the budgets divided into chapters, articles, and sub-articles, yet the funds are voted by the chambers, classified as under five large sections into which the services provided for in the war budget are divided.

This arrangement facilitates the re-adjustment of the budgetary charges, subordinate to each of the five sections, in case of a reduction in the sum under any one section. It is almost needless to point out that professional officers are more competent to re-arrange the detailed items affected by the diminution. Thus, supposing a million of francs reduced out of the amount under Section III of the war budget, the army administration might effect the required saving by diminishing the number of soldiers, whose pay, cost of rations, clothing, and hospital diet would be struck out of the amounts under these separate heads; further, some amounts out of other sections might also be diminished so as to meet the economies ordered by the chambers.

But here it cannot be too plainly stated, that the economical management of the funds granted for the army and naval services is believed to be so securely established, by excellent administration, and by the exactness, order, and clearness in accounting, that objections are very seldom raised to the detailed charges in the budget, though, as respects the strength of the army, demands are often made for a reduction; the total saving would in case of such diminution be named by the chambers, the re-subdivision of the voted sum being made by the departmental administration under the detailed heads of the budget. An examination of the French accounts will show that alterations in the ordinary budget grants, for fixed services, rarely take place. In respect to all estimated outlay, the testimony borne by Sir M. Peto as to the correctness of estimates of works prepared by the French public works department, is borne out by the like accuracy in the estimates of the French war department, as respects the data on which the payments for the services therein set forth are calculated.

The ordinary budgets having been examined and passed by the Chambers, the financial law is usually passed in July, granting the funds six months before the budget comes into operation. It is expressed in clear and intelligible language favourably contrasting with the clumsy style of our Appropriation Act, passed long after our budgets have been in force.

The extraordinary budget charges are also included in the financial law, and of late have mainly comprised the expenditure needed for the special reconstruction of the fortifications, and for replacing the ordnance and small arms of the French army by those of the new models, and for special public works. The estimated expense for the whole of these extra services is, however, fully prepared, and the expenditure generally spread over a series of years, the amount appropriated for each year being shown in the current year's budget.

XV.—*Complete Specifications in French, contrasted with Indefinite Entries in English Budgets.*

It may be asked, in what way are the specifications of the French budget more complete than those of our own country? I therefore, turn to the two lately published budgets of the two countries, for brief illustrations. The English budget has an entry of 54,000*l.* for the purchase of horses for the several branches of the army, without detailing the number of horses for each branch, or the rates to be paid. The French budget gives the number of horses to be purchased, viz., 7,439 for about 200,000*l.*, with the number and rates of horses for each mounted branch; the number of the horses for officers, and their prices, being also detailed.

The English budget shows an entry of 1,166,856*l.* as the cost of provisions for the soldiers, without details as to the number of rations to be supplied, or the rate per ration; whereas the French budget gives very full figured statements of the number of soldiers to be rationed during the year, the number of rations during the year after deducting sick and absent, and the cost of each ration, with total cost. I could select from the two budgets many other comparisons, in order to show that complete specifications as to rates, quantities, and numbers necessarily afford a powerful check; whereas the objectionable measure of omitting the tale, measure, or quantity rate by which the cost is arrived at, allows of great abuses in expending.

There is also another error in our estimates. It may be explained by what took place in the debate in the House of Commons on the 8th of March. In answer to a question from General Peel as to how the sum included in this year's estimate for the Small Arms Factory was intended to be applied, whether in the manufacture of new arms, or in the conversion of the Enfield rifles into breech-loaders, the Secretary of State explained that, "Only a "lump sum had been taken for the Small Arms Factory, for the very "reason that they did not know how that sum would be expended." And in answer to one of the many excellent suggestions for improving the entries in the estimates, made by Colonel Sykes, the Secretary of State replied, as to the expenditure for new ordnance, that they "could tell what guns they proposed to make in the ensuing year, "but he, Colonel Sykes, would not be able to check the sums from "that, because a large portion of the money taken for the gun "factory was spent upon repairs of guns and gun-carriages."

These brief statements of the Secretary of State exhibit several evils caused by the House of Commons not rigidly requiring all moneys to be specifically and distinctly stated before they are voted, and by denying to ministers all power of directly employing funds, whenever urgently required, without a prior vote of the House. Now, according to May's "Parliamentary Practice," the House of Commons only "authorise specific grants for the payment of distinct "sums of money for particular services, as explained in estimates laid "before them upon the responsibility of ministers." According to the Secretary of State's reported remarks, a large sum is this year included in the army estimates, and actually voted, not only without the House enforcing their own standing orders of requiring the detail of distinct work, but, it is elicited that the Government has not even decided on the pattern of new arm to be made up, and cannot, therefore, know how to spend the money; thus there is no real parliamentary check upon the misappropriation of the public money, so eloquently denounced in former Parliaments, seeing that any sums may be entered in the estimates without the guardians of the public purse requiring a specification of purposes, and necessarily allowing the accounts to be anything the expending department pleases. There would be greater economy and more efficiency with defined personal responsibility for acting.

There may be difficulties in applying the French system in all its exactness to our English budgets, owing to the jealousy of the House of Commons in nominally requiring all funds to be voted, before the executive Government can apply the moneys to the service of the nation. But by thus withholding from the Sovereign that power, which the French Emperor has retained, of authorising funds for urgent public wants while the chambers are not in session, the members of the House of Commons practically entail on our ministers the frequent necessity of incurring responsibilities, which they are not justified in taking, by ordering unforeseen services which always entail expenditure of public moneys not regularly granted by Parliament. Our ministers actually create liabilities, with less restraint, which will require the spending of our public moneys to a greater extent, than the credits for public moneys of France are disposed of by the Emperor; this power can only be exercised when the chambers are not sitting, and before appropriating extra credits to the public services, the advice of the Council of State must be obtained, and the responsibility of two ministers of state, one being invariably the finance minister, must be pledged. We are right in confining to Parliament the entire power of granting funds, and to the responsible ministry the entire power of withdrawing the money from the purse; but the English ministry might on emergency be authorized to act, subject to valid checks, like those which the French Emperor allows to be imposed upon himself, by seeking approval, from the chambers when re-assembled, for legalizing the extra grants. This jealous restriction entails a worse evil; it leads to the practice of putting before the House of Commons loose and inaccurate estimates, in order to afford great facilities for spending money without stint; the grants thus passed by the House of Commons practically place, without any real control, large sums at the disposal of ministers, without that healthy action which exists in France of obtaining special sanction for their acts from the chambers.

This great blot on our financial system has been pointed out by that excellent public servant, Mr. Anderson. The remedy proposed by him to the Select Committee on Accounts, was placing a special credit of two millions at the disposal of the Treasury, to be applied as the wants of special services may call for funds. This suggestion was negatived, owing to the unwillingness of the Committee to entrust to ministers of state any direct control over this fund, though small in comparison with the far larger sum which they absolutely, although indirectly, have at their disposal, from the ill-defined way in which the House of Commons is content to have the estimates presented, and the inefficient check over expenditure, at present exercised by the Commissioners of Audit. The proposal of Mr. Anderson would have allowed ministers to incur a small direct expenditure, but the far more serious irregularities which now give irresponsible power of spending large amounts, under cover of loose estimates, would have been arrested. In fact the proposition involved the choice of the lesser of two evils.

This special fund might be safely entrusted to the Treasury, provided the same publicity were observed here as in France, by announcing in the "Gazette" the amount granted by the sovereign, on the advice of the cabinet, to each departmental minister, showing in minute detail for what purposes to be expended. The sanction of the Chancellor of the Exchequer for every such expenditure being a main requirement, by his counter-signature being affixed to the order in the "Gazette," as also that of the departmental minister of the service to which the advance of cash is made; such authorization would have to be followed up by a real, and not, as now, a sham system of auditing, and the extra grants made during the Parliamentary recess would be submitted for the sanction of Parliament immediately on the session opening.

The responsibility of issuing money out of this special grant would then rest on the Cabinet, and not, as at present, on an individual member of the Government. It would at once terminate the existing most objectionable course of transfers of surpluses on some heads to meet deficiencies on other heads, and create a real Parliamentary sanction, instead of a nominal one, as now obtaining.

But recurring to that point of excellence, noticeable in the French departmental budget, viz., its clear specifications, it was only accidentally elicited from the Secretary of State, that the sum entered in the army estimates under the vote for the Small Arms Factory, is not for any improper purpose, but for an arm of which the model is not yet fixed on, and that the appropriation of the voted money will hereafter be made at the will of a minister. The French practice of showing in a separate budget the whole expense of renewing the arms of the French troops, as a special and unusual charge, not frequently recurring, and to be spread over a series of years, would be found far more correct in principle, and in the end more efficient as well as economical, and practically far more convenient for the departmental offices, and would have obviated the necessity of voting moneys for purposes not settled. The cost of renewing the small arms and ordnance of the French war department is based on a general estimate for the entire allotment required for the army; its expenditure is spread over a series of years, and the amount which can be well employed in any one year of the series is entered as a portion of the year's expenditure, and passed by the legislature in the extraordinary budget of the year without the necessity of discussing its propriety. Thus the lessened outlay of one year from any cause, such as change of pattern, or, as with ourselves, from not having agreed on a pattern, does not prevent a greater outlay in the year following when the pattern of arm is settled, neither does it prevent the data on which the original estimate was prepared from being revised, nor the pattern of arm from being altered as new models are invented. Further, by the passing of the first general credits on the general estimate for a series of years, the changes needed in that general estimate in after years, on new data being obtained, would be rendered far more easy for the House of Commons to discuss, and the unconstitutional course, of taking votes of public money without statement of the specific use to be made of it, would be obviated.

Further, the "lump sum" may be almost immediately needed; and with the knowledge on the part of the department by which it is to be spent (which has a large establishment to be kept in work), of the way it has been voted, it will probably be found, when the account of the expenditure of this "lump sum" is rendered, that it has been unhesitatingly drawn on by the department, and spent on work which may exhibit the profits of the factory to the advantage of the establishment, but not exclusively in the construction of small arms of an improved or required pattern, the avowed object for which it was granted. In time the Secretary of State will learn that to have lump sums at his disposal, on which powerful heads of departments can at their convenience draw, without the responsibility and labour of preparing accurate estimates of cost and of work to be completed, only exposes himself to trouble and the country to great risk of seeing the public moneys wasted.

It was also stated, in reply to Colonel Sykes, that moneys required for repairs, are, in our estimates, blended with the moneys required for manufacturing new ordnance. This blending of outlay for repairs to guns and gun carriages with cost of new ordnance, is another thoroughly objectionable practice. Repair is but a current charge of the year that will leave no permanent results. New stores become stock, to be kept as representing money, and remain on the ledger as representing available resources. Confusion is caused by mixing up these two distinct kinds of expenses, destroying all comparison between the outlays of several years.

The expenditure on new guns merely converts gold into iron. Practically this conversion may lead in future, as in past years, to the iron guns being wasted as of no value; but, nevertheless, all who understand the question will be found to avow that a private individual might as well consider the conversion of the funds at his private banker's into consols as a charge of the year, and as an expenditure to be wiped out of his books, as for the nation to follow the present mischievous course of not having its actual expenditure for new stock, distinguished from that for wages and repairs.

XVI.—*Clearness and Fulness of French Accounts.*

I have now before me the annual reports and accounts of the army material of France, extending over a series of years, and annually laid before the legislature after being verified as to accuracy by the Court of Accounts. No such publication as this exists in England, neither do I believe that such information as we find in the French volumes could be supplied by our War Office records. These volumes are politically as well as financially of use. They dispel the frequent accusations of secrecy and bad faith so freely urged against France as to accumulations of stores for hostilities, as also those respecting money reserved for war purposes. Therefrom any one can learn how many pieces of ordnance are in store and in use with the army of France; also the value of all material, ordnance stores, camp equipage, hospital supplies, medicines, commissariat and clothing stores; the balances, quantities, and values of each article at the beginning and at the end of the year, as also the values, the receipts and issues are all stated. For the last ten years, of which I have the reports, the values of all war stores at the beginning and end of the year, corrected by the values added and struck off during the year, have been maintained at an almost uniform amount, varying from 611 to 650 millions of francs. The augmentations during the Russian and Italian wars do not appear to have caused those wasteful additions to the French stores which we have had in our own arsenals. This increase is owing mainly to our loose system of regulating and checking the budgetary charges for stores; in France the accounts show the expenditure, and only those used up are replaced, but no such check over our expenditure exists, for no account has ever appeared of the value and quantity of stores expended within the year.

This was shown by the reply to the question put by General Peel to the Secretary of State as to whether the estimated cost of stores for the navy is separated from the cost of army stores, to which the reply was that "he could not recollect in any "of the estimates which he had ever seen, that any distinction "was made as to the portion of the sum that was taken for the "navy." This is a strong illustration of the confused way in which the English accounts for the two great services have hitherto been drawn out. The cost of the ordnance stores, of all descriptions, required by the navy, has been borne by the army, and the consequence is that it is impossible to ascertain the actual outlay for either service. But the Secretary of State is in error when he implies that because he has never seen the distinction made between the charges for the two services, it has never been attempted, seeing that the old Ordnance Board, so mistakenly abolished, did propose the distinction being made between the cost of stores for the two services; and the Duke of Richmond, when Master-General of the Ordnance, amongst his many excellent suggestions, also advised that the expenditure on stores for the two services should be separated. This amount is also unknown, and, never in modern times even estimated, far less shown in accounts. It is a heavy charge on the army, and expensive to both services from the waste which invariably results from the mismanagement of one department of the service when called on to perform any duty for another. I would as soon employ my next-door neighbour to lay in my daily stock of provisions and keep spare supplies in his larder, having the expenditure for both homes paid for by the parish without any check or inquiry into the cost, as continue to allow the army to pay for naval ordnance stores, without even showing the cost, and keep them up by means of army establishments. The slight check of even showing in the accounts the cost of stores supplied to the two services, to say nothing of the repayment of the outlay by the naval department to the army, does not exist in the annual accounts. Those who know the abuses which arise out of the condemnation of stores by independent authorities of other branches of the service, without any serious check over erroneous condemnations, can well imagine the extravagant expenditure now occasioned by the mode of providing the navy with stores, without stint, and without counting the cost.

This separation exists in respect to some services, mutually affecting army and navy or performed by one branch for another branch. The navy represents the charges for the sea transport of troops, but the actual expenditure is not repaid by the army, and the result is, that an outlay which, if shown in and borne by the army estimates and accounts, would be considered exorbitant, is permitted to pass without challenge; still it is shown by the navy as a charge for the army, and, so far, superior to the concealment about the stores. The only real and effectual remedy is to follow the practice of the French. If one branch of administration in France incurs outlay for another, the money expended is repaid. The administrators of our army and navy services now partly act upon this system. The expense of the police, employed in the navy dockyards and army arsenals, though primarily borne by Sir Richard Mayne in the charges for the metropolitan police force, is invariably repaid by the two services and entered in their respective accounts. In France this principle is universal, the navy, public works department, and minister of the interior, repay to the war minister, the value of the gunpowder and other stores supplied by the war department to these branches of administration, and in the French accounts, the cost of dieting the sick of the army and navy, treated in the hospitals of either service, is repaid by the branches to which the men belong; and the naval and military departments pay rent to the Treasury for the buildings occupied, if not erected out of funds belonging to the respective services.

I have already pointed out the many changes in the forms and headings of our budgets and accounts, whereas the classification of the French headings is rarely, if ever, altered. In contravention of our Treasury instructions, as before explained, the changes which have been made during the last few years in the classification of the English budget heads has destroyed the comparison. For example, I note that No. 18, major heading, covering the expenses of the War Office, has had several numbers affixed during the past few years, and undergone changes so frequent, and of so strange a kind in the detailed arrangement, as to require many pages to explain; and thereby defying all comparison of either estimated or actual outlay for this great branch. Since the unwise measure was taken of amalgamating into one large, unwieldly and inefficient office, many army offices, which were useful checks on each other, and efficient and economically maintained when separate, the House of Commons should see that a vast establishment, intended to exercise control over all army establishments, itself under no real check, should be a model to follow in respect to the clearness, fulness, and accuracy of details in the estimates and accounts. A comparison of the voted with the actual outlay, one year with another, is very difficult, and it is impossible for any one, not in the secret, to tabulate the War Office expenses since 1854 under minor heads common to two years of that period. There is no part of the army expenditure so dwarfed in the estimates and accounts, as those of the War Office, and contrast most unfavourably with the greater detail given of the smaller expense for the head-quarter establishments of the army. The like objection may be urged against all army votes during that period; all have undergone so many alterations in the arrangement as to prevent comparison between different years of the series; the Vote 18 for the War Office expenses may be quoted as the one in which the transposition of charges has been most extensively made, and that in a way to cut off all real parliamentary check. The omission for several years of the charges for the clerks of classes is a grave offence.

It is useful to reiterate that, not only are the French budgetary details full and complete as to numbers, grades, and quantities, as well as money values or amounts, but that the cost of distinct classes of services and of departments are separately exhibited, and in what locality to be incurred; these are most minutely shown, and all separately, in accounts. The comparison of the details in the budgets can invariably be made with the details in the year's accounts. Judging from the reports there does not appear to be the least desire on the part of the French authorities to confuse examination by omitting, as invariably happens in English estimates and accounts, quantities, and classes of persons on whose behalf the expenditure is incurred. The French further deserve our imitation in that their accounts show the various charges under pay, rations, clothing, hospital diets, distinct for each branch of the service, as also the numbers and quantities of all the new stores obtained by departments, and their cost, separated from the cost of repairs. Full information on any one portion of the French service can be ascertained for any one year, and the practice of stinting some branches less in favour than others cannot be resorted to in France without detection.

The year's published account of our army expenditure prepared by the War Office, and certified to by the Audit Board, has just reached me as I am preparing this paper, and affords a good illustration of our practice. One-third of the whole of our army expenditure, the pay proper of the army, is represented in one item, and the account in which this one entry of 4,391,868*l.* is made, is actually designated the "explanatory statement of sums expended." I cannot but think that the publicity, which in this country is useful to check abuses, does not exist here. The abuse which this abbreviated entry may cover, is that the Guards, or other more favoured corps, may be maintained in great strength, while the less appreciated corps, such as the Military Train, is kept far below its establishment. Now so uniform and distinct, as well as stable, are the classifications of the minor headings in the French budgets and accounts, that as this kind of blending of expenses does not exist, the compilation of any information required for a series of years, for any one arm—infantry, cavalry, artillery, guards—can be made without difficulty. Nay more, the particular localities in which the expenditure is incurred, in France, Algiers, Mexico, Rome, Syria, China, Italy, Crimea, are all set forth;* the money spent on separate branches of the army and departments, under uniform minor heads, being distinctly stated.

The charge for any locality, for any year, or for a series of years, under different heads for any branch of the army may be contrasted; I need not add that the statistical arrangement of such facts is of great value. The French official reports enable us to ascertain not only the cost of the forces maintained in the several localities but equally the distribution of the effectives of the French army, during any one of the years for which we have the accounts.† The published reports show that the French effective army was distributed as follows in the years below indicated, and the arms composing this strength can also be ascertained.

* Appendix, Table VII, pp. 442, 443. † Ibid, Tables VIII, IX, pp. 442, 443.

	1853.	1855.	1859.	1860.	1861.	1863.
France	270,255	343,210	305,797	358,354	378,775	323,715
Rome	8,760	6,899	7,378	10,373	18,385	14,981
Italy	—	—	159,707	19,515	—	—
Crimea	—	153,648	—	—	—	—
Algiers	70,982	63,357	74,395	68,457	67,724	55,431
Syria	—	—	—	2,854	3,434	—
China	—	—	—	5,932	5,581	—
Mexico	—	—	—	—	—	32,682
Cochin China	—	—	—	—	—	1,543
	349,997	567,114	547,287	465,485	473,889	428,352

The French accounts of actual expenditure for the army in these separate localities exhibit to the people of France the money they pay for so employing their military forces. And this not only for each of the years, but by a simple calculation in addition the cost of any portion of the army, or of the entire force, can be ascertained during a series of years for each service, and, as above stated, all the details connected therewith. The knowledge which the French people possess as to the army expenses, and in what localities cost is incurred, is therefore minute and accurate, and the money cost of the glory the nation reaps from having the French troops serving out of France, is measured accordingly. The opposition made by the French people to the employment of the French troops on such expeditions as that of Mexico, is no doubt based on the fact that they see the bill, and know they pay too dearly for the doubtful honour gained. Now no such details as these can be obtained from our official reports.

XVII.—*Extra Grants or Credits—How Obtained and Applied.*

As before explained, the ordinary budgets do not provide for the cost of the expeditions to Mexico, Rome, and China, consequently we see at the beginning of the year the French Government applying for additional grants to meet these expenses; the objections so frequently raised in France, as to the waste of the national funds for these services, will be found directed to the policy of employing the French army on such expeditions. The deputies are, however, satisfied, that so long as the troops are so employed, the funds needed for their payment must be granted, and they have the fullest certainty that the money will, when granted, be economically spent. Nay more, the Government endeavours to show that the expenditure for each of these expeditions is rightly and economically made, for it is clearly and fully set forth in the official accounts, all under heads common to the ordinary budget but separately exhibited, thereby admitting of contrast with the ordinary expenditure. The cost of these expeditions since 1862 has been included in the accounts as extraordinary expenses.

It is in these charges for distant expeditions that economy is practicable in France, and, therefore, in the withdrawal of troops from Rome, and the promised withdrawal of troops from Mexico, grounds exist for the anticipations in France, of future diminution of expense.

The extra credits, so justly open to question, are, however, very generally voted in the early part of the year for which the expenditure is being incurred. In respect to these the French Legislature has as good, and as early, an opportunity, for expressing an opinion on the proposed expenditure, as our House of Commons now has in respect to all the outlay proposed for our War Department; and with the better chance of exercising check, because the attention of the deputies is then solely devoted to those portions of the French expenses which are really open to dispute, and need not be withdrawn to the examination of those details upon which, from their fixed and uniform nature, no difference of opinion of any importance can arise.

The French system, in its practical and efficient control over the funds required in excess of the ordinary budget demands, appears also superior to that of England, from the way in which the legislative body votes the amounts, or confirms the decrees of the Emperor authorising extra services during the months the chamber is not sitting. In France all such excesses are obtained only by decree of the Emperor, or by vote of the chambers, and invariably only on the preparation of regular estimates, showing in detail the heads of service to which the moneys are proposed to be applied. These increases must be proposed under the responsibility of two ministers of state, the one being the finance minister, and the other the head of that branch of the administration to which the extra money is to be appropriated, before the Council of State and the Emperor give their assent. In England, on the contrary, it will be found on examination that out of the large sums expended for our army and navy during the past twelve years, in excess of the sums voted on the ordinary budgets, a considerable portion has been obtained from Parliament on general votes for the combined expenses of the army and navy. Also, that these funds granted, with very few and unimportant exceptions, in lump sums, have been placed at the entire disposal of ministers to expend on either branch of the two services as they may see fit, without any estimates ever having been prepared and laid before Parliament, showing either the intended application of the funds in detail at the time obtained, or the way in which the funds would be employed in after years, and, above all, without specifying within what period the appropriation may take place, thus breaking the only useful part of our system, of making the payments within the year, as authorised by the House of Commons, form the basis of our accounts.

I pass over the objectionable State policy of permitting funds to remain disposable, in the power of ministers of state, to be employed, years after the House of Commons shall have voted the supply, to meet demands made by the army and navy departments, in excess of the funds granted by Parliament on regular estimates, because there is a more serious defect, for there does not appear to be any proof given by the Audit Board, in their annual reports on the expenditure of the army and navy, that sufficient care has been taken to ascertain, that the extra funds, appropriated by ministers out of these general grants, have been spent on the extra services performed. Another objectionable feature in the course followed is the double liability placed on the nation, consequent on the regular budgets being increased in amount, mainly from the pleaded necessity of such operations, for which these special grants are also obtained. Thus, for the ten years dating from 1854, the total Parliamentary grants to the army and navy, on the regular and supplemental estimates of these branches, amounted to more than 300 millions. But taking all the grants for these services, for the ten years previous, at the fair amount of 170 millions, there is an excess of 130 millions voted for the army and navy during the latter of the two periods. The wars with Russia, China, and Persia, carried on during the last ten years, no doubt caused this excess. And yet for these wars the special votes passed by the House of Commons during the last ten years authorised about seventeen millions to be placed at the disposal of ministers, to meet special requirements for those services not provided for in the estimates, with the further objectionable power of spending the extra money year by year until the credit was exhausted. We have not the order which the French secure by their double estimates, but we have all the expense and confusion which the want gives rise to.

Another great defect in our practice will be observable on a comparison of the sums entered in our army budgets with the expenditure as certified to by the Audit Board, thus bringing to prominent view the considerable differences between the amounts primarily voted and expended. The four years' accounts from 1858-59 show an expenditure in excess of the total sums voted in the ordinary budgets of the four years, to the extent of more than four millions. The available accounts of the two latest years show an expenditure below the amount voted on the ordinary budget. Now both these differences, excess and deficiency on the sums applied for, show the existence of serious defects in our mode of estimating. The excess of expenditure, during four of these six years, was made good by a few supplemental grants passed by Parliament, and partly by the moneys voted, in years before, for the Russian and China wars, but portions appeared to have been made good after the excess had been certified to by the Audit Board, and necessarily long after the date when the money was expended. Pending this last adjustment, moneys provided by Parliament for other services must have been employed to meet these excesses. Now all must allow that this is a very dangerous power to place in the hands of any authority.

Again, on examining the separate transactions of the year, the latest audited account of the army shows, in expenditure, an excess of the sum voted under different heads of the army budget, 202,388*l.*, whilst it fell short, on other heads, to the extent of 773,986*l.*; the excess being deducted from the surplus, left a balance of 571,698*l.* to be surrendered. No one having any experience of estimates and expenditure can do otherwise than view these excesses and deficiencies as most unsatisfactory. Their existence besides is diametrically opposed to a formal resolution recorded in the "Journals "of the House of Commons," vol. civ, p. 190: Resolved,—that it appears by the report of the Board of Audit, that the expenditure for naval services for the year 1847-48 (per Act of 10 and 11 Vic., c. 107) exceeded the grants (including appropriations in aid) voted by Parliament, to the amount of 327,787*l.*; that the sum voted by Parliament for the formation of the dockyard battalions in the year 1847-48, was 20,000*l.*, and the actual expenditure amounted to 72,399*l.* 19*s.* 3*d.*, being an excess of 52,399*l.* 19*s.* 3*d.* in the vote, and forms part of the excess. That this House concurs in the opinion expressed by the Lords of Her Majesty's Treasury, "that "with regard to this large excess (for the dockyard battalions), the "expenditure was entirely within the control of the Admiralty, and "that the proper course would have been to have postponed the "enrolment of men beyond the numbers provided by Parliament," that "when a certain amount of expenditure for a particular service "has been determined on by Parliament, it is the bounden duty of "the department which has that duty under its charge and control, "to take care that the expenditure does not exceed the amount "placed at its disposal for that purpose."

The reports on the French expenditure contrast most favourably with the meagre and unsatisfactory reports of our expenditure. The French reports, from the Court of Accounts, show that the great financial principle of not permitting any public outlay to be imposed on the nation, until the estimate for the contemplated amount has been prepared, is there strictly watched; that the rule of allowing no charge or liability to be undertaken by any minister, until some superior authority has also decreed or passed the estimated outlay, is also fully reported on. It is true that the law grants to the Emperor the power of authorising extra credits, or of transferring funds, previously voted, from one head of the same budget to another head, but the exercise of this power is confined to the time when the chambers are not in session; and even then the like formalities in ensuring exactness, order, and economy, that are followed in respect to the passing of laws by the chambers granting credits, are required to be followed by the Emperor in promulgating these decrees. Moreover, all are inserted in the "Bulletin of Laws," and laid before the chambers immediately on their next assembly, and are then discussed and incorporated into laws passed by the legislative bodies, and all scrutinized by the Court of Accounts. The ministerial responsibility in France is also specially enforced by the Court of Accounts in respect to authorising extra payments, seeing that all these, as well as the applications for grants for extraordinary services, must have, in addition to the signature of the war or departmental minister, that of the finance minister approving thereof, before the Emperor signs the decree. All departures therefrom are duly stated in the report of the Court. In this process there is an extent of formality and of publicity in transactions, which, even if viewed as constitutionally wrong, yet checks discontent by the publicity. As respects the control of the chambers, it may safely be said to be as effective as that which our House of Commons exercises, and the Court of Accounts surpasses in efficiency our Audit Board.

This clearness and fulness in budgets and accounts of public expenses may not prevent the expenditure of the nation being considerable, as seen by the example of France, but this good would be secured, that if in England we had the same excellent mode of estimating and accounting as obtains in France, the power of the members of the House of Commons, to place a restraint on the Government in respect to the gross sums to be drawn from the pockets of the nation, would be increased many fold, and would entail the necessity of sanction for extra grants before spending. If our estimates were made true expositions of anticipated revenue and liability, clearly and distinctly classified, and if Parliament would employ an efficient establishment to enforce the responsibility of the officers whose duty it is to prepare them, by demanding within a limited time an explanation of all important differences between estimates and actual results, by claiming a refund of all unexpended sums under the several distinct assignments, and by withholding sanction to the excess of expenditure under any of them until satisfactory reasons be adduced, then the blots could be then hit by aid of the right means of challenging mistakes on good and sound data, as the deputies of France can now do when questioning the propriety of the expenditure for Mexico and Rome, all of which, ready to their hand, is shown in full detail in the accounts of France.

The marked contrast between the two nations may thus be summed up, that whilst in England the people are content to grant ample funds to the Government for the efficiency of the army and navy and public service generally, they have no assurance that it will be economically and usefully spent. In France, on the contrary, the people know and admit, that however great may be the sums the Emperor obtains from the nation for the army and navy, he honestly sees to their right application, and being ably supported by excellent departmental officers, the nation has full confidence in the economy of the expenditure. The people really is told where the money goes to, and can see for itself under what head the record shows that there has been too much paid for a whistle.

I have thus endeavoured to describe the precautions used in France to ensure proper administration of the public funds, by applying to all branches clear and explicit regulations, so that all budgetary and financial operations in each division of the administration may be carried on in an uniform and regular way. It cannot be too often repeated, that, it is mainly through the long-established practice of entering in the budgets the details of all proposed charges, and specifying the exact purposes to which the public moneys were to be applied, that the economical and right appropriation of funds has been ensured. Following thereon, I also see in France another good result from a clear budgetary system. It protects the nation against being charged with future liabilities by any Minister of State, or other authority, who has not obtained a budgetary credit from either the Emperor or Legislature. An examination of the financial history of France will also show, that whatever temporary irregularities in the preparation of the budgets may have taken place, during the political convulsions to which the country has been exposed, the financial disorders have, under the laws, been promptly checked by the able administrative officers of the bureaux, and, under the honest support of the Emperor, it is to them that the credit is due for the strict enforcement of the great principle, so thoroughly appreciated by the French people, of requiring all expenditure to be represented by a distinct entry in the budget.

XVIII.—*Defects observable in the latest English Estimates.*

I have dwelt thus much on the great attention required to be given to the budget and audited statements, because, without accuracy in the details of the original authority, the income and expenditure cannot be correctly audited, without which no financial measures can be safely or satisfactorily carried on. Moreover, loose estimates invariably lead to wasteful, extravagant, or what is worse, ignorant expenditure, and to inaccurate accounting. In order further to illustrate the great inaccuracies to which our accounting is liable from defective estimates, I may mention that the estimated expenditure for one article of provisions for the army, in the three years ending 1864-65 aggregated 4,218,864*l.*, whilst the actual expenditure only amounted to 3,852,101*l.*, being an error of more than a third of a million. Again, for the same period, the estimated ration recoveries from soldiers aggregated 2,674,755*l.*, whilst the actual recoveries only aggregated 2,238,995*l.*, being a difference of 435,000*l.*; on both sides of this account, the error is nearly a million, arising out of the estimate of expense and the estimate of recoveries being both far above the actuals. The excellent leader in the "Times" of the 24th February, on the present year's war estimates, contains useful remarks. That article points out, that an apparent diminution in the war expenditure of only 6,407*l.* has been effected, and that but for the saving in the clothing department, the year's estimated expenditure would have been in excess of that for last year, instead of there being, as the official estimates appear to show, a saving of 253,447*l.*

The doubt is here caused by the delusive mode in which the estimates are drawn up. Instead of placing all outlay on one side, and the recoveries on the other, the War Office estimates show that, taking recoveries into account in diminution of gross charges, and giving the balance as the net outlay, many deductions, aggregating a large sum, are made from the gross expenditure, so as apparently to diminish its real amount; and further, owing to the natural tendency to minimise proposed expenditure and maximise expected recoveries, a double error may arise, both tending to make the expenditure appear less than it really is. This practice, objectionable in a mere account point of view, is in contravention of an instruction in Treasury Minute, dated 2nd May, 1848, wherein, after a review of the course followed during many years, the Lords of the Treasury stated that "after a careful consideration of the "recommendations of the several committees of the House of "Commons before referred to, respecting the mode of carrying these "appropriations to the credit of the public, and of the effects of the "various principles hitherto adopted, my Lords are of opinion that "henceforward the great departments of public expenditure should "submit their annual estimates to Parliament without any deduction "on account of appropriations in aid, and that the full sums for naval "and military services should be voted. They are, therefore, pleased "to direct that no further appropriations shall be credited in aid of "the army, commissariat, navy, and ordnance votes, but that the "receipts in question shall, commencing from the present time, be "paid over quarterly to Her Majesty's Exchequer, to be appro-

"priated as ways and means." There are other useful instructions as to the examination of and accounting for these "aids," but I may say, that so far from the orders of the Treasury having been obeyed, the practice has been continued of deducting the expected receipts from the gross expenditure, and to a greater extent in this year's estimates than ever before. Nay more, the disobedience of the Treasury instruction was brought to prominent notice by the examination of a witness before a select committee of the House of Commons, without leading to any change.

The year's estimated outlay, according to the War Office estimate, for the year ending 31st March, 1867, is 14,095,000*l.* for an army strength of 138,117 officers and men; and the latest published audited War Office accounts, for 1863-64, I adopt as a comparison with the present estimate. The force proposed to be kept up in 1863-64 amounted to 148,242 officers and men, but what force was actually maintained is not known, as no verification as to strength is ever made in England, though accurately ascertained in France. The present estimate provides for about 10,000 officers and men less than in 1863-64. In that year the audited expenditure was found to be 14,890,238*l.*, but the detailed statements show, that in order to make the results approximate to those in the estimate, the sum of 1,339,246*l.* is entered under various heads, in diminution of the real expenditure. In like manner, in this year's estimate, the amount is only kept down to 14,095,000*l.*, by making deductions to the enormous amount of 1,733,893*l.*, being the expected recoveries during the year; and by a large diminution in the votes for stores. The actual expenditure for 1863-64 ought to appear in the accounts as really found, independent of the sums recovered, to the amount of 16,229,484*l.* This year's estimated outlay ought to be put down at 15,828,893*l.*, apart from the estimated recoveries, applied to diminish the year's apparent expenses. The difference between the actual of 1863-64, and the estimate of 1866-67, as above, is 400,591*l.*; but with a reduction of army strength in the estimated establishment of 1866-67, as compared with that of 1863-64, of 10,000 men and 2,000 horses, the diminution of outlay ought, on General Peel's calculation of 100*l.* per man, to be fully 1,000,000*l.*, instead of, as above, 400,591*l.* And even this saving is problematical. There are great doubts whether the estimated recoveries will be realized this year to the extent stated, for many of the proposed recoveries, such as stoppages for provisions, hospital diets, &c., are put down at higher amounts than the recoveries of 1863-64, when a larger force was kept up. The largely diminished expenditure for stores taken in abatement shows, as Mr. Hoffay stated before the Select Committee on Public Moneys, "that you may live on your "stores, and make a saving on the aggregate grants."

The far higher question raised by the "Times," as to the effect which the diminished contributions from India will have on the real expenditure for the army, cannot be discussed, seeing that the entries in the estimates are so arranged as not to place Parliament in possession of accurate information as to the exact payments from India, and from other sources, which will this year reach the Treasury. The present year's estimate makes out, however, that the extra receipts and payments, which were in 1864-65 1,308,600*l.*, will this year rise in amount to 1,456,400*l.*; in other words, that with a diminished strength in India, the extra receipts, which were largely swelled in 1864-65 by the greater strength kept up in India, will this year be augmented, though that strength on which the capitation tax is paid is actually lessened. Well may the "Times" denounce the mode in which these estimates are prepared, and still more will they appear to disadvantage with the carefully and clearly prepared details which the French budget affords.

The "Times" justly calls attention to the only improvement which can be found in this year's form of estimating, and that is in respect to the third vote for clothing establishments, services, and supplies. In this one portion of the estimate there is an approach to the admirable detail which the French war budget gives, as to the rate of cost per man for the soldier's clothing, and cost of some of the materials to be purchased for that clothing. The year's estimate should exhibit the cost of the clothing establishments distinct from that for materials; the numbers composing the establishments, as well as the rates of pay, the quantities of materials, with rates and numbers, and rates of cost of garments to be obtained or made up, as also the strength of the army by ranks to be supplied with clothing, should all be entered. The very clear course followed by the French War Department, in accounting for the gunpowder made up for all the services, should be followed by the clothing department, and the operations of this useful department will then be less liable to be misunderstood.

It is for the interest of this well-managed portion of the manufacturing departments of the army to show by results, to be set forth in the estimates and accounts, that its working is economical to the State and beneficial to the soldier. Nothing is better calculated to insure this object than to keep the outlay for all materials distinct from that for the establishments, thereby guarding against the suspicion as to the rightfulness of the claim which the War Office puts forward of diminished expenditure in this year's estimate, which naturally arises, when it is seen, as shown above, that the apparent saving is effected not by diminished charges, but by abstaining from procuring ordnance stores. This saving is shown in the 12th and 13th Votes, where the proposed outlay for stores for 1866-67 is

400,000*l.* below the estimated outlay of 1863-64. In fact, by expending military stores without replacing them, the present Government are acting as a Government of thirty years ago did in respect to naval stores, in fact living on their stores and making a saving on the aggregate grants.

XIX.—*Unnecessary Withdrawal of Cash from Exchequer, Large Accumulations against Paymaster-General, Large Balances to Debit of Sub-Accountants.*

I now invite your attention to a serious evil which exists in the English system, but from which, as already stated, the French system of accounts is free. This arises out of the objectionable English practice of making imprests or advances; it leads to the withdrawal of large sums from the Exchequer, before being required, and to the retention of needlessly heavy balances by sub-accountants, thus causelessly crippling the money resources of the Treasury. In illustration of my point, I take up our War Department accounts for examination.

The Exchequer, under authority from the Sovereign and Treasury, supplies the Paymaster-General with funds to meet the expenses of the army. The balances in the Exchequer of the unissued army grants, at any one date, ought to show the total expenditure of the year, approximately, by the amounts which the Paymaster-General has, up to that date, drawn out of the Exchequer. I place before you the following table of the balances in the Exchequer at the dates below, extracted from the statement of army ledger balances. The total army expenditure as found, enables us to ascertain the approximate amount paid to the Paymaster-General. The table is, however, incomplete, owing to the War Office having withheld one year's account of ledger balances, it is also defective by reason of the many changes in the dates of closing the balances.

For what Year of Account.	Actual Balance of Unissued Grants in Exchequer.	Dates on which Balances were Struck.	Total Expenditure as found on Audit.	Approximate Amount Paid to Paymaster-General to Date of Balances.
	£		£	£
1857-58........	1,618,736	31st January, 1858	13,217,614	11,598,878
'58-59........	2,590,164	31st „ '59	12,527,053	9,936,889
'59-60........	2,448,621	31st December, '59	14,140,541	11,691,920
'60-61.......	2,505,868	31st January, '61	16,286,832	9,186,064
'61-62........	4,190,380	31st December, '61	15,932,669	11,742,289
'62-63........	4,965,350	31st „ '62	15,419,346	10,453,996
'63-64........	not supplied	—	14,890,239	—
'64-65........	7,850,000	30th September, '64	14,639,628	6,789,628
'65-66........	6,385,000	31st October, '65	—	—

An examination of this table will show that the amounts actually withdrawn from the Exchequer for the army appear to be sufficient for that expenditure for a few months more than ought to have been needed, when calculated according to the monthly average of the year's expenditure; but I admit that without a full investigation it is impossible to ascertain how far the withdrawals exceeded the real requirements to defray expenditure.

The Paymaster-General, on the requisition of the War Department, issues funds to the sub-accountants out of these amounts. Now, the cash balances in his hands ought to be kept down at the lowest point, or, if large, these might be considered as the real balances available not only for the army, but general requirements of the Treasury, in order so to utilize balances as to prevent the necessity of deficiency bills, in security to the Bank of England, for advances to Government. By the ledger statement, the balances in the hands of the Paymaster-General were as follows, on the dates below, corresponding with the dates of the Exchequer balances; these balances will appear to be very considerable in amount, having reference to the army requirements up to the stated dates.

	£
31st March, 1857	1,263,512
31st January, '58	1,261,125
30th November, '58	2,996,127
31st December, '59	7,032,620
31st January, '61	4,294,608
31st December, '61	8,813,519
31st " '62	6,826,426
Account not supplied this year (1863)	
30th September, 1864	8,864,160
31st October, '65	3,786,507

But in respect to these balances, we are at once met by a difficulty, which so often arises in our army accounts; since the amalgamation of the army and ordnance into the present War Office, a change of system has taken place in showing the actual cash balance of the Paymaster-General, separate from the cash advanced by him to sub-accountants. The actual cash balance was last shown, in one year of the above series, viz., on the 31st March, 1857. About that date, the accounts of the Paymaster-General ceased to be sent to the Audit Commissioners for examination, the War Office having undertaken to audit the money issues by the Paymaster-General; a function specially suited for the Audit Board, as affording the best and indeed only check on the money issues to the War Office. Indeed, this very check was one that was prominently urged by Mr. Anderson in his memorandum of 27th March, 1854, as the check against any abuse of the Treasury authority in overdrawing, in the following words:—"The moneys granted for army and militia "services are under the control of the Secretary at War." "The "Treasury has no power to draw on these grants, and the best "security which the public has against the misapplication of them "by the Paymaster-General, under the direction of the Treasury "is, that the Audit Board would disallow in his accounts any pay- "ment made upon an order not drawn in conformity with the law." The large balances now standing against the Paymaster-General show the laxity of the existing check, and, apart from the question of legality in taking away the control of the Audit Board, the delay in clearing off the amounts issued by the Paymaster-General appears wholly unnecessary; the vouchers for the advances made to sub-accountants are mere orders, in the simplest form, and the facility for passing the accounts of the Paymaster-General by their examination is therefore great, yet months of arrears appear to have accumulated; moreover, moneys paid out to sub-accountants, and for which the Paymaster-General has a right to take credit, should not be blended with the cash balance standing to the credit of the Secretary of State for War. I may also add, that when the army balance-sheet was first introduced by Mr. Anderson, the cash in hand was inserted, and continued to be shown until the War Office was formed, and the navy balance-sheet continues to this date to show the cash balance without blending the amounts disbursed, but not audited. This vicious and very questionable practice of blending two transactions of an opposite character under one head only proves how little control the Treasury can exercise over the accounts.

The remarkably large balances outstanding to the debit of our army of sub-accountants is, however, the most objectionable feature in the whole of our financial arrangements. The following statements of outstandings to the debit of individuals will exhibit the evil in a serious light; I only give a few examples of balances compiled from the statement of ledger balances annexed to the account of the army expenditure for the year 1864-65.

In that (the latest published) account, there stand, on the 31st October, 1865, to the debit of 773 colonels, paymasters of regiments, the sum of 2,565,213*l.*; to the debit of 276 barrack-masters, storekeepers, &c., the sum of 1,066,664*l.*; to the debit of 207 colonels and paymasters of regiments of militia, the sum of 539,075*l.*; to the debit of 283 volunteer accountants the sum of 254,792*l.*; to the debit of 117 staff officers of pensioners, the sum of 1,060,110*l.* The gross total therefore of the above, outstandings to the debit of 1,656 several accountants, is 5,485,857*l.* on the 31st October, 1865. It is difficult, if not impossible, from the way different classes of accountants are mixed up, to specify the number of months during which these accumulated balances have remained unaudited, but judging from the debit balance of 1,060,110*l*, against the 117 staff officers of pensioners, the accumulations would appear to represent twelve months unaudited expenditure for each class of accountants. I have endeavoured to tabulate these debit balances for a series of years, but without success, owing, as again I specially notice, to the many strange changes introduced into the ledger balances of different years, whereby the classes of accountants included under each head cannot be uniformly set forth by reason of the yearly transfers of accountants from one class to another, which, with the alterations in dates on which the balances are struck, effectually destroy the statistical check derivable from tabulating like facts for a period of years.

It would have been useful to have been able to tabulate these unaudited balances, as I believe that the figures would show the very large sums which have in some years remained long unsettled. It would also have been useful to have had a comparison between the outstandings of late years and the amount of advances or imprests referred to in Mr. Anderson's memorandum of 27th March, 1854, wherein he mentions the sum of three millions as the advances of the year, being only half the amount of the actual outstandings at the present time.

XX.—*Slow and Defective Audit, in Examining and Passing Expenditure.*

The slowness in auditing the accounts of the army expenditure is one of the most marked features in our system: a delay which is alone sufficient to vitiate the control over expenditure. In order to enable you to judge thereof, I exhibit a table of the sums passed as examined at different dates. But before making comments, a few of the many extracts which could be given from the evidence or writings of able officers connected with our financial business, as to the great importance of prompt and effectual audit, are now placed before you.

The Report on Public Accounts, 9th February, 1829, by Messrs. Brooksbank and Beltz (Parl. Paper, 290 of 1st June, 1829), stated at p. 108:—"In dealing with the accounts under consideration, there "is really no object of paramount importance to that of securing "*their early transmission to this country*, and of subjecting them, "IMMEDIATELY UPON THEIR RECEIPT, to a regular course of audit. "WE FEEL THAT WE CANNOT TOO MUCH INSIST UPON THIS ESSEN- "TIAL POINT OF ECONOMY, WHETHER IN REFERENCE TO THE PER- "FECT ARRANGEMENT OF A COMPREHENSIVE SYSTEM OF ACCOUNT- "ING FOR THE NATIONAL EXPENDITURE, OR TO THE ATTAINMENT "OF THE MOST EFFICIENT CONTROL OVER THE CONDUCT OF THE

"PUBLIC SERVANTS. No check can be devised upon the fidelity of "the agent, of superior efficacy; and, when combined with the "numerous local and other restrictions in which the commissaries "of accounts have no immediate part, the security of the public "may be considered as almost complete; every obstruction to the "due operation of this salutary check, that cannot be supported by "a prospect of at least equal advantage, should be removed, and the "delays incident to the examinations of the commissaries of "accounts, and the voluminous, and too frequently the captious "correspondence which that examination produces, must be considered in the light of an evil to be endured only so long as its "necessity can be clearly and indisputably established."

Sir H. Parnell in several of his writings discussed the importance of prompt audit, and also the mode of conducting that audit. His remarks may be usefully perused in connection with evidence given before the Public Moneys Committee. Mr. Anderson, in reply to Question 4184, stated:—"I think that the Treasury control upon "the public expenditure at present is weak, and that it is owing, in "a great measure, to a defective knowledge of the actual proceedings of the departments." The late Mr. Arbuthnot frequently gave evidence before select committees to a like effect.

Before the Select Committee on Miscellaneous Expenditure (No. 483 of 26th July, 1860), Sir R. M. Bromley, K.C.B., Accountant-General of the Navy, stated, in reply to Questions 1783 and 1784,—"But I speak as an accountant, and I say that a "detailed account of that expenditure is not rendered to me, who "pays away the money under certain defined orders: nor is there "any account of it subsequently rendered for audit. Very far from "being a safe system of account, because having been Secretary of "the Audit Board for some years, I have learned to distrust public "accountants, and it was my business so to do; and I still continue "that feeling, whatever may be the eminence of the individual, for "I do think there ought to be a control by way of audit of an "independent character. I put the character of an individual out "of the question altogether, as I think we should look after the "proper expenditure of the public money."

Before the same select committee, E. Romilly, Esq., and C. Macaulay, Esq., of the Audit Board, gave most important evidence as to the character of the audit by the Audit Board. I have found such great misconceptions prevailing as to its efficiency in checking the detailed expenditure that the following extracts from the evidence of these officers may be useful in dispelling existing delusions:—

"*Q.* 488. The duties which we have to perform are to audit "those accounts which are sent to us, either by Act of Parliament,

" or by Treasury directions; and the mode in which we audit these " accounts is to see that all the sums which are taken credit for are " properly authorised and vouched. *Q.* 505. Our examination of " the War Office accounts goes to this: that we examine the " expenditure in those accounts with reference to the votes of Par- " liament; but the detailed expenditure is left to the department " itself.

" *Q.* 506. When you say you examine, you mean simply the " gross amount which is mentioned in the vote? *A.* Which is " mentioned in the Appropriation Act.

" *Q.* 507. And no question of detail is examined by you at all? " *A.* The detailed examination of that account is left to the " department itself; it is true, however, that officers of ours, who " have to visit the department, have access to the vouchers of that " department; but provided there has been an order of the autho- " rities at the War Office to pass a certain amount, the Audit Office " must and do pass that amount as a matter of course.

" *Q.* 508. Then practically the Audit Office has no check upon " the expenditure of the Secretary of State for War, except that of " keeping them within the amount voted; or is there practically any " detailed check upon the expenditure which the Secretary of State " makes? *A.* There is not in our office.

" *Q.* 509. Provided he keeps to the gross amount voted you have " nothing to do but to examine and to see that no more than that " has been spent? *A.* Yes; no more under that particular vote.

" *Q.* 510. Can you state whether there is any check by the " Treasury or by any body else upon the detailed expenditure of the " war estimate? *A.* There is virtually no check, except in the " department itself, with respect to the detailed expenditure.

" *Q.* 514. In your experience, has it ever occurred that you have " stopped a payment to any amount in the Audit Office? *A.* No, " I think not; I do not think that that is any part of our duty; " the duty of the auditor is simply to lay before the competent " authorities the actual state of the account, and thus enable them " to take any steps which they may think fit on the subject.

And in reply to Question 544, they added that "it is quite " obvious that unless you can audit an account immediately after the " expenditure has been incurred, your audit is of very little use."

Further extracts from the hitherto little noticed but highly important letter which Mr. Romilly addressed to the Chairman of the Select Committee on Public Moneys, on 13th June, 1857, clearly state the functions of an auditor and the necessity of prompt audit. In order to compress the extracts, I must ask you to excuse their apparent abruptness by being disconnected from the context. Mr. Romilly states, that " the duty of an auditor of public accounts should be

" to pass in review the acts of an accountant, after these acts have " been completed." "The more accurately this duty of the auditor " is confined within these limits, and the more speedily the functions " of the auditor follow those of the accountant, provided the functions " of the two are not allowed to interfere with each other, the " greater will be the security of the public."

This letter from Mr. Romilly also explained the nature of the appropriation audit, as then and at present conducted by the Audit Board of which he was chairman. He pointed out that "it will be " necessary to state what that system (appropriation audit for the " army and navy departments) is." " It is to institute a comparison " between the sums severally granted and included in the Appropriation Act, and the expenditure under these grants." "The " several votes taken for each department comprise various subordinate items included in the estimates, and under the provisions " of the legislature, the Commissioners of Audit are not directed " to institute any comparison between the details of the expenditure " and their subordinate items." "In the event of the auditors " ascertaining in the course of their examination that the intentions " of Parliament had not been followed with respect to any of the " subordinate items, they would not be entitled to question the " department and report to Parliament on the subject. For " instance, a vote is submitted to Parliament of 138,399*l.* for " salaries, &c. An estimate is laid before Parliament showing in " detail the various items upon which the rate is founded; exception is taken in Parliament to one of these items as being unnecessary or excessive, and the House of Commons resolve to " diminish the amount of the vote or grant to the extent proposed; " the vote is accordingly taken for the smaller amount. But the " comparison which has afterwards to be instituted by the audit " officer is between the gross vote and the gross expenditure in " respect of that vote. So that if Parliament should consider a " salary of 2,000*l.* more than should be granted to A.B., and " that in consequence the vote for salaries should be diminished " by 500*l.*; it would, nevertheless, be in the power of the executive " to pay the 2,000*l.* to A B, nor would the auditors be entitled to " notice this deviation from the intentions of Parliament, provided " the total amount expended under the head of salaries, were kept " within the limits of the sum so voted." "There is at present no " provision for informing Parliament whether their wishes have been " fulfilled or not, or of showing whether the Government are entitled " to the credit of having acted in all respects strictly in accordance " with the intentions of Parliament."

The practical application of these remarks on audit may be shown thus. Mr. Romilly and Mr. Macaulay have pointed out, to the effect, that if Parliament saw fit to vote a specific sum for one purpose, such as 100,000*l.* for a church, it would be the duty of the Audit Board to see that none of it was taken away for any other purpose. The conclusion is, that in proportion as moneys granted by Parliament are voted for specific purposes, the less is the latitude for misapplying such moneys; or rather, the appropriation audit is more powerfully exercised. The converse is also the case; the larger the sum granted by Parliament under each vote that comprises a great diversity of services to be defrayed in detail, the wider will be the power of the department entrusted with the expenditure to apply the funds so voted to purposes for which not intended.

The tendency to increase the amounts under each vote, by diminishing the number of votes, has been avowed before a select committee, and has of late years gradually increased. In 1834 the sum of 8,117,041*l.* voted for army and ordnance services, was divided into 43 votes, whilst in 1854 just before the formation of the War Office, and the amalgamation of the two branches, the sum of 10,114,449*l.* was divided into only 28 votes. In 1862, after the amalgamation, the sum was 15,273,751*l.* divided into 22 votes; and in 1864 it was 15,060,237*l.*, divided into 27 votes. Our appropriation audit only applies to seeing that the totals of expenditure agree with the several totals of voted sums, the correctness of the audit in detail (as verified by the French Court of Accounts) not being ascertained by our Audit Commissioners; and whilst the average sum granted by Parliament in 1834 under each vote was limited to about 200,000*l.*, the limit is now more than half a million, thereby greatly extending the power of the department to misappropriate funds.

On this question I could make more extracts if space permitted, all showing how little real control by means of independent audit does really exist over the national moneys; and yet from the collection of Treasury Minutes, from Mr. Macaulay's useful paper, laid before the 1865 Public Accounts Committee, and from evidence recorded by Mr. Romilly, and many able officers, and also by Mr. Quilter Ball, on the Railway Audit Inquiry, it would be easy to compile rules for the guidance of auditors, containing the soundest principles, by which this important, essential, but little known, duty connected with expenditure, ought to be regulated; but then the auditors must be independent, not exposed, as one auditor said, "I "well know from experience how crushing the feeling is, that you "have to contend with departments that are too strong for you."

The weakness of our Audit Board and our inefficient appropriation audit, may be contrasted with the far greater check exercised by the Court of Accounts over the French expenditure and accounts. The following testimony as to that court's authority, is taken from a report of 6th December, 1845, drawn up by a committee on which Sir

W. Herries, Mr. Brooksbank, Mr. Thomas, and Mr. Anderson served. "It (this court) embraces the superintendence of the entire accounts "of the income and expenditure of the country." "After the restoration, it was invested with sufficient powers to exert an independent "public control." "The Court of Accounts is a judicial court, to "which all parties who have been engaged in the receipt and payment of the public money, are required to deliver their accounts "and vouchers, and from which also they can obtain a release from "their responsibility. Its duties extend, moreover, to a revision of "the orders for payment issued by the executive departments of "the Government, with a view to ascertain that proper vouchers "have been obtained, and that the orders of payment have been "issued in strict conformity with the financial laws." "The final "account of every department requires the public ratification of "the Court of Accounts as to its correctness;" "the superintendence "of that court reaches not only to the cash agents who receive and "pay away the public money, but those also who authorise the "public disbursements; and that all the executive departments being "required to lay before the chambers accounts showing how they "have applied the credits granted to them; the control of the "legislature extends over every branch of the public finances." The above is a part only of more detailed evidence which Sir John Bowring, in his report* on the French accounts bore to its authority and efficiency. It continues to this day to exercise an independent and useful control over expenditure and accounting for both cash and stores. It is well supported, and its labours appreciated by Government, legislature, and people of France. A third of a century has passed since the value of such a court was made known; a fifth of a century since able Treasury officers reported on the advantages of such an institution, but it is only in 1866 that we are in part applying this practical advantage which the French have long possessed; but as usual in our following, we are by our very imperfect action only showing how far we are behind the French by our unwillingness to confide to our Audit Board that full authority requisite for the practical performance of their duties.

I now proceed to show the state of the detail audit; and desiring to show by figures in what respect the auditing is dilatory, I annex a table† drawn up from the statement of army ledger balances, to show for a series of years the progress of the audit, but it has not been prepared on an uniform plan for the series of years. The changes in dates in closing of the ledgers of the army, are so singular as to cut off the means of comparison, one year with another, which otherwise, with uniformity might be so usefully made. Out of the expenditure in the year 1865-66, which may be calculated at 7 millions in the seven months ending 31st October, 1865, there had only been audited to that date 2,232,502*l.* Out of the expenditure of 1864-65, amounting to 16,639,629*l.*, nearly one-half, viz., 7,605,736*l.*, was not audited until after the close of the year, and on the 30th September, 1864, when about 8 millions had been spent, only 1,509,599*l.* of the expenditure had been audited. Further, out of the expenditure of 1863-64, amounting to 14,890,239*l.*, there remained a sum of 8,507,025*l.* to be audited after the close of the year. Further information respecting this year cannot be supplied, as the War Office withheld it. The total expenditure for 1861-62, was 15,932,670*l.*, from which it may be inferred that about 12 millions was spent up to 31st December, 1861, but out of it only 4,402,981*l.* was audited at that date, leaving 11,529,688*l.*, to be audited after that date; but there is no available information as to when the final audit for the year was completed. On this part of these important duties there is less available information than on any other part of the system of check, and yet under the Audit Board's Minute of 13th July, 1849, there must be most useful statements of the progress of audit available, though never hitherto called for, by the House of Commons, and yet it is a description of information which specially belongs to the guardians of the public purse. The conclusion I have arrived at is, the practice of the House of Commons to group classes of expenditure under votes only facilitates the misapplying of public moneys to purposes not intended, and diminishes the check of the Audit Board. Ministers should be granted the total needed for the departmental service, and the account should show the details of expenditure in contrast with the details in estimates.

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* Laid before the House of Commons in 1831-32.

† Appendix, Table VI, p. 441.

XXI.—*Course followed in Allotment of French Funds and Verification of Accounts.*

According to the latest War Office estimates of France and England, the annual cost of the armies of the two countries is nearly the same for each; about one and a quarter million sterling per month. But the mode in which the funds allotted are operated on widely differs. In our case, funds appear to be unnecessarily withdrawn from the Exchequer either through the Paymaster-General, but certainly through advances to sub-accountants; these appear to remain long unemployed, before being required to be used in actual disbursement of military charges, or the system allows public funds to some extent to remain unaccounted for in the hands of secondary agents. The system aggravates, almost encourages, delay in sending in claims against Government with the vouchers in support thereof. Accounts, therefore, are kept open long after they could have been settled by actual payment in full. And while our method keeps accounts open or unsettled, even after payments in the form of advances may have been made in full, it likewise increases to a serious extent the number of public accountants.

The mode of supplying the French War Office with funds appears to be well calculated for the purpose of guarding against these defects. It renders advances of any kind, except in a few special cases, quite unnecessary. No funds are withdrawn from the French Treasury, until required in full settlement of the whole or part of a claim against Government. The issue of money, in payment of a claim, is proof of final settlement to that extent. Claims against Government are promptly sent in, and their accuracy, on the grounds of their being recent, is the more readily verified. The French method also minimises the number of persons who handle the money of Government, and keeps down the number of public accountants responsible for ordering its issue. None pay money but those who belong to the Treasury service. Under this system the monthly War Office estimated funds wanted from the Treasury, agree closely with the actual outlay for that month; one admirable feature of control is established, it *prevents* rather than corrects fraud, defalcation, misapplication or misappropriation.

A clear and definite kind of responsibility is in France imposed on the officer of the army who authorises the issue, and another kind of responsibility on the officer of the Treasury who actually issues the money. The regular sending in, every ten days, of journals kept by the respective officers, War and Treasury, provide a mutual check on transactions. All vouchers are forwarded early in each month; and all needed accounts immediately after the close of each year. This system entails on the War Office the monthly revision of the army expenses; correcting errors in the year's estimates, by the valuable experience thus monthly acquired.

The French military finance is conducted on rules common in France to all services under the several ministers of state, and a regular trained body of accounting officers are thus available. And why should not the payment of the English services be brought into like order, by the adaptation, with modifications in detail, of the French financial organization and accounting, to our Treasury service? To this end I dwell on such topics.

The following is a sketch of the course followed in France for the supply of funds to the War Department.

The administrative basis for the French army is, in practice, the divisional system. There are, usually, twenty-two army divisions in France and Algeria, besides the special divisions for the forces at Rome and in Mexico. At the head of each of the twenty-two administrative units is placed an intendant-general, who may be considered, and is in reality, a subordinate minister of war in each of the divisions, but without control over the discipline of the troops; and he has the immediate direction of most of those military arrangements which our War Office vainly endeavours to control as well as direct from the London office. The intendant-general, placed in the midst of the troops, has a practical and an exact knowledge of the requirements of the division, for he is always an experienced officer, long trained in the administrative duties of the army. The principle with the French is a distributed responsibility, with central action, head and limbs; in England it is all head (or what stands for it). Thus the possessor of all authority, the War Secretary of State, becomes in appearance unquestionable, although he may be mistaken, mischievous, weak, and inefficient, from the mere impossibility of one individual, however high his qualifications, conducting all affairs.

The arrangements previously described ensure a full acquaintance with the year's liabilities imposed on the nation, set forth in the budgets. The French system provides other securities for the right spending of the public monies subsequent to the acceptance of the budget. Under the financial administration laws, the finance minister submits month by month for the sanction of the Emperor a statement of the probable sums, with their proposed distribution, likely to be required in the following month, to meet all the departmental charges then falling due, basing his calculations for the required sums on the demands made by the other ministers of state, after being revised in his department. The procedure of the minister of war, in preparing his monthly requisitions on the finance minister, may be accepted as applicable to the course followed by the other ministerial branches.

The responsibility for the detailed distribution of the funds granted by the legislature, in the form of a credit to be drawn upon for payment of the army, rests on the war minister, who, in French official phraseology, is designated as the "ordonnateur," a name common to all ministers having funds so granted. But the war minister, and all the other ministers may, and do, delegate to selected subordinates the functions of "ordonnateur secondaire," to sanction the payment of claims for army services rendered, and to order the issue of money from the treasuries; the eventual responsibility for their acts remaining, however, on the war minister. The intendants-general of the divisions of the army are usually entrusted by the minister of war with the power of ordering such expenditure, but within certain declared limits, and for specified services. To ensure order in the appropriation of funds, the intendants-general send in to the war minister, by the 15th day of each month, an estimate in detail of the charges to be paid in the month following. No vagueness or uncertainty is permitted to exist as to the purposes for which the public money is required, seeing that each of the estimates of the twenty-two intendants-general sets forth the exact amounts that may be needed, stating the chapter and article of the regular budget under which the money is allowed to be obtained, and to which, when paid, it will be debited. The chief of the War Office accountancy prepares from all these division estimates, punctually received at the prescribed date, a statement of the funds required in the several localities for the payment of the army services of the month, under the major and minor heads, divisions, chapters, sections, and articles used in the year's regularly sanctioned budget. The war minister signs and submits it, together with the separate circle or division estimates on which based, to the finance minister, who checks the month's demands by the year's total grants, and when satisfied thereon, obtains the Emperor's orders for the required allotment of the funds.

The finance minister does not, however, entrust the dispensing of the public moneys to the War Department. He only authorises Treasury officers throughout the circles to pay, on the orders of the intendants-general, such sums as may be stated to be due on account of army services within the prescribed limits, with regard not only to the sum total, but also to the amounts under the several heads of the accepted estimate.

And again, another precaution intervenes to insure the proper application of the funds granted. Although the officer in each circle (the intendant-general) acting for the war minister is responsible for the correctness of each payment to be made by the Treasury officer, and must authorise him to make the issue by an order stating the amount to be paid and name of the person to whom only it is payable, still the Treasury officer is required to demand that vouchers for the monies paid by him, formally signed by the claimants, shall be attached to the order of the intendant-general, and be so clearly drawn out as to supply evidence to the Treasury, not only as to the authenticity of the claim, but also that the claimant has been settled with in part or in whole. The order issued by the intendant-general for the Treasury payment, as also the vouchers, must bear on their face, marked by the intendant-general, the chapter and article of the budget to which the payment is to be debited.

The officer of the Treasury who pays the money is responsible for the clearness and fullness of the vouchers, and for the sufficiency of the order for the payment, and, if he find irregularities, is required by law to refuse payment until they are corrected.' As this officer is directly subordinate to the finance minister, and is quite free of direct control from the War

Office, all who know the antagonism between officers of the same Government, serving under separate branches of administration, can fully appreciate the punctilious accuracy with which officers of the Treasury will exact from War Office functionaries all that is to be required at their hands in these matters. Further, the officers of the Treasury paying moneys within each circle, on account of the army, are required, within the first ten days of each month, to remit to the authorising officers of the War Department, a statement of payments from the Treasury during the month preceding, arranged by the budget period, as also by departments, and under the chapters of the budget to which appertaining. The War Office functionaries, after having verified by their signature their accuracy, transmit them immediately to the departmental minister.

The War Office functionaries in each circle keep a journal in which to enter, by order of date, all the financial transactions concerning the administration of the expenditure confided to them, besides other books suitable for recording the transactions according to the services. These books are intended for the consecutive enrolment by claimant, by chapter and article of the budget, the claims admitted for services, and orders for payment issued; as also, but by chapter alone, of payments completed. On the 10th of each month, the war functionaries, after having verified all entries in all books kept, forward to the War Office, month by month, until the date of the closing of the year's credits, a monthly statement, showing by chapter and article of the budget—1st, the total credits opened; 2nd, the claims established on completed services; 3rd, the total of orders issued for money payments; 4th, that of payments actually made. Finally, a year's account is kept open and forwarded to the departmental minister by each officer, authorising payments of moneys, at the date fixed for the definitive closing of each budgetary period; the year's books of all departments being all closed at the same date.

The Treasury officer, at the date of closing the budgetary term, furnishes to the War Office functionary of the division, detailed statements of the balances remaining to be paid, indicating the nature of the credits, the names of the creditors, and the sums due to each.

The war minister has a central office of account for verifying all transactions. There is kept a set of books, journal and ledger, with subsidiary books, in which are recorded, in abstract and by date, all transactions relating to credits, settlement of claims, orders issued for payment, and payments completed. Further, the minister publishes yearly during each session of the legislature a full and detailed statement of all the transactions, which are exhibited in abstract in the general account published by the finance administration. This consists of: 1st, a general table, by chapters, showing all the definitive results of the expired budgetary period, which serves as the basis of the law for the definitive settlement; 2nd, statements intended to explain, with all details proper for each service, the liabilities verified, payments completed, and claims remaining to be paid at the close of the budgetary period; 3rd, a comparative statement, by chapter, of liabilities incurred for the expired budgetary period, with those of the preceding budgetary term, explaining the differences shown by this comparison; 4th, the audited statement of closed account of completed payments.

At the end of each year the Emperor, on the proposal of the finance minister, nominates a commission of nine members, chosen from the body of the senate, of the legislative body, and of the Court of Accounts, charged with closing the journal and ledger of the general accountancy of finance to the 31st of December; verifying the agreement of the accounts of ministers with the results in the central entries of the books in the finance department. A *procès-verbal* of this transaction is drawn up and handed over to the finance minister, who communicates it to the senate and legislative body.

There is also placed before this commission a statement showing, for the closed budgetary term, a comparison of accounts published by ministers, with the results of the individual accounts submitted to the judgment of the Court of Accounts. The commission thereon proceeds to the verification of this statement, and its report enunciates distinctly the receipts and payments made during the year on the open budgetary terms. The annual certificates of the commission are thus made to confirm the exactness of the definitive accounts rendered by the departmental ministers. This commission verifies and settles, up to 31st December of each year, the books and registers kept of the debt, and the total of rentes and pensionary subsistences, as well as the securities to be delivered up; also the debts and credits, of which the recovery is confided to the judicial agent of the Treasury. The commission is also charged with verifying the agreement of the entries with the general account of the finance administration. The general account of material of each minister is submitted for the examination of this commission. The result of their inquiries is included in the *procès-verbal* of their labours, and distributed to the senate and the legislative body.

The last and most important check on the transactions of ministers is exercised by the Court of Accounts, to whom all accounts for all departments are sent with the vouchers, to be by them examined, and to have the accuracy or errors publicly decreed in open court, the whole financial transactions of the nation being reported on by this high court to the Emperor. And this report also is printed, and laid before the legislature.

The course of procedure may, in description, seem too complex, but practically it does not prove to be so. The work done is well done, answering its purpose; and all that appears complicated to those uninitiated in the process, is clear and in easy connection, part with part, to those engaged therein. Our own system involves heavier labours of routine. Does the indefinite result, in our case, justify the toil? I think not. Much of it is strength spent in vain.

XXII.—*Utility of Exhibiting Actual Expenditure of Stores in Accounts, Distinct from Amount Invested in Stores.*

The examples already adduced of the exactness with which the expenditure on account of stores, buildings, and other kinds of property are recorded in the French accounts, ought to be taken in connection with the very suggestive paper published in our transactions, from our able colleague Mr. Jellicoe, offering suggestions for improving the present mode of keeping and stating our national accounts, of our valuable assets in buildings, ships, and stores. Fully concurring therewith I adopt all the valuable recommendations of our colleague, and ask a reference to be made to this useful paper, in the seventeenth volume of our *Journal*, p. 322, without further reiteration of the opinions so well expressed, beyond urging that the whole of our assets in buildings, stores, ships, and every description of property should be brought into separate accounts and have their numbers and quantities with values attached, with yearly increases and decreases clearly exhibited. I may, however, in corroboration, place before you the remarks of that able French writer, Montcloux, who, from the internal evidence of his work, must have been thoroughly conversant both with the theoretical and practical business of public accounts, and whose practical suggestions as below, brought about in the French accounts that reform which I hope Mr. Jellicoe's paper may yet help to effect in our own.

"The employment of credits does not always constitute a real "expenditure for the State. When the State exchanges its money "for articles destined to supply the magazines, arsenals, and work-"shops, it does not actually expend, but only makes a conversion. "That has been understood in part, for all the services which apper-"tain to the minister of finance; the employment of funds in "leaf tobacco, gunpowder for the trade, maps, in bars of gold and "silver for the mints, and in paper intended for stamps, immediately "causes an accounting in material; but this course has not been "followed in what concerns the two ministers who effect analogous "conversions on a much larger scale, those of war and of marine. "The purchases being once effected in these two departments, the "converted values are delivered to agents who are not accountants, "and whilst the minister of finance, placed as guardian of the "public treasure, has at control not only the funds, but also the "public lands, the forests, and all the convertible articles above-"mentioned, the conversions destined for the supply of the war and "marine departments entirely escape his surveillance. The immense "values stored in the arsenals of one minister, in the workshops of "another, and in the provision magazines of both, are confided to "agents who are independent of the minister of finance and of the "court of account.".

"The chambers have never taken notice of the absurdity of "this state of things. The deputies insist that the ministers "should not employ a single centime without legal authority, and "demand a strict account of this centime; but, once it has been "proved to them, that this centime has been converted into another "form of value, there is an end of it, they inquire nothing about it. "The ministers who have exchanged moneys for articles of which "they make themselves depositories, can afterwards dispose thereof "as they please, without any authority being given, and without "being responsible to any one."

"The result of this course is, that the budget of expense is not "entirely composed of actual expenditure, and that under this head "important operations are shown in it, which are nothing else but "conversions of money into stores; and on the other hand, that an "actual expenditure is incurred every year, of which neither the "budgets nor accounts make any mention. The conversion being "considered as an outlay, is noted as such; an account is rendered "of it as such; and the consumption of the sum thus converted, "which is a real outlay, gives rise to neither a vote nor a settlement. "It is just as if the minister of finance were to buy bank paper "with the money in the cash chest, to present this operation as an "actual outlay, and then disposed of the paper without being autho-"rised and without rendering any account thereof. In taking as "the basis of the fluctuations of the public property, the budgets "and accounts submitted to the chambers, it might happen that "the State should appear less rich precisely in that year when its "magazines are overflowing with stores, and should be supposed to "be economising, just in the year when there had taken place a "waste of provisions and articles stored up in the magazines.

"It is evident that this system completely falsifies the results "that public accountancy professes to give. The schedule that the "minister of finance might prepare at the present time would only "be the schedule of the pecuniary property of the State, and not a "schedule of the real property of the State. Could one imagine the "manager of a house of business giving an exact account of the

" fluctuations of the cash chest, and saying nothing of the fluctuations of the magazines? Would the associates, partners, and " assignees appointed to judge of this account, and pronounce on " the good or bad management, consider their mission ended when " they had been told how the cash account was balanced, without " letting them know the state of the account of general merchandise? That is, however, what the chambers do. As to the " treasure, its general accounting, which is in part modelled on that " of commerce, follows neither the account sale of goods nor the " stock or fixture account. That a private person who lays in but " few commodities, and hopes to sell them again immediately, should " only keep a cash account, is no great inconvenience, without being " very logical. A private person only accounts to himself; but " ministers are not conducting their own affairs; their position is " that of an intendant, of an agent who owes an account to others. " At the risk of not being true, the account ought in this case to " say everything. It was desired that the credits opened to the " ministers should be rigorously observed. The financial law enters " into the details of the wants of each service, and fixes its limits " closely; but the placing material in the hands of the ordonnateurs " overthrows at a single blow all the systems of credits, for, just in " the year when the chambers have closed the cash chest to the " ordonnateur, he opens the magazines on his own authority, and " instead of the moneys which are refused to him, he applies to the " expenses of his service the stores which have been left at his sole " and entire disposal.

" Is the public property then only precious when consisting of " moneys? Do measures for their preservation become useless " because the value is invested in a different form? It is no less " essential to preserve a hundred thousand francs worth of bronze, " wheat, or hemp, than a hundred thousand francs of coined money. " The handling of material ought to entail the same consequences as " the handling of cash.

" The immoveable property of the State is managed under the " superintendence of the minister of finance. This property is " composed of streams, navigable rivers, the coasts, the foreshores, " or land between high and low water mark, ports, harbours, " roads, fortifications, fields for manœuvring, ramparts, forests, and " public buildings and grounds of every kind. The fortifications " and other establishments of war are entirely managed by the " engineer branch of the army, without the intervention of the " agent of finance. The administration of bridges and highways " has still in its hands several millions worth of land, formerly " comprised in the tracing of roads, and which has never been " declared, nor handed over to the land administration."

Subsequent to the publication of Montcloux's views, a law was passed by the chambers, on the 6th June, 1843, requiring the accounts of material from all branches of the public service to be submitted for the control of the Court of Accounts, commencing on the 1st of January, 1845, also requiring a royal ordonnance, to be promulgated in the form used for the regulations of the public administration, defining the nature and mode of control. In 1844 the royal ordonnance was issued, and ministers of state published for their respective departments detailed instructions to give effect to the intentions of the legislature and the royal orders. The departmental regulation for the material belonging to the War Department was issued by Marshal Soult, minister of war, and is dated January, 1845. It has remained in successful operation up to the present time. It is a model of clearness, characteristic of all those regulations emanating from that able commander. I am informed, that of late years, the accounting of the material of the navy has been made very complete,* and that the clearness in the accountability of that department, as far as relates to the stores, has equalled, if not surpassed, the accounting of the War Department; but that this latter department was trying to improve their accounts of stores, so as to maintain in this branch of their business, the ancient and hitherto acknowledged superiority over all the services of France, in respect to accounts both of money and material.

The annual reports of the material of the French departments have been regularly printed and laid before the chambers, and the reports relating to the War Department since 1856 are now in my possession; and, from my own experience in respect to the like accounting for the war material of India, the preparation of returns showing quantity and value of our home war material, equal to those of France, is quite within the power of any officer; at all events, it is a serious defect, that Parliament and the Treasury are not in possession of such an account, seeing that without valuations in money these authorities can exercise no real control over either the Admiralty or war minister, in respect to that most wasteful part of our expenditure, on stores, ships, and guns.

The French war material account for the year ending 31st December, 1863, is based on the inventories of the stores remaining on the 31st December, 1862, plus the additions and minus the issues during the year, arranged according to the fixed nomenclature. The whole of the operations of charge and discharge are drawn up from 850 individual accountants; the accounts show the material of every description in use with the troops, even the medicines in charge of the medical officers, all being added to the like material in the Government magazines or establishments. Another column indicates the value of material, and various other columns show the changes under different heads in the quantities of stores. The appendix also explains very clearly and fully the system under which the service is carried on. The accounts are exceedingly complete, not only as a store document, for insuring an exact knowledge of the quantities of stores, but also as a financial record; an examination of it would show that it affords the means of regulating the money to be expended on material; a check we do not possess. The following statement of the approximate value of the whole of the material of the French War Department in each year from 31st December, 1855, also showing the value of stores added or diminished during each year of that period, is exhibited.

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* As this paper is passing through the press, I have received a copy of the naval material account, and I have no hesitation in stating that it is a model for us to adopt.

Date on which the Valuation was Made.	Approximate Value at the end of each Year.	Value of Stores Issued in Excess of the Value of those Received.	Value of Stores Added in Excess of the Value of those Issued.
	fr.	fr.	fr.
31st December, 1855	638,023,190	6,762,001	—
" '56 ...	631,261,189	8,667,037	—
" '57	619,929,013	6,248,664	—
" '58	611,821,022	—	31,090,255
" '59 ...	642,911,277	—	8,730,577
31st December, 1860	651,641,854	5,795,106	—
" '61	645,856,748	4,859,547	—
" '62	640,997,201	—	8,450,167
" '63	649,447,368	—	—

The entries of values have been purposely abridged, but the values of stores received and expended, under each of the twenty branches of service to which they belong, are stated in the printed accounts, and the differences above given are the excesses of the receipts over the issues, and *vice versâ*.

The correctness of the material accounts is secured by the Court of Accounts having, ever since 1845, declared, with all the solemnity with which their awards in respect to the accounts of money are given, their decision as to the correctness, or otherwise, of the annual accounts of the quantities and value of the material of all the ministerial departments of the State.

The evidence given by Mr. Arbuthnot before the Military Organisation Committee as to the great variations in the voted moneys for our stores and works, is of great importance to show the necessity for a store account in this country. I would gladly make extracts therefrom if space permitted. But the necessity for introducing a more efficient check on the expenditure for our stores, cannot be better shown than by perusing the evidence given in 1856 by Mr. Anderson and Mr. Hoffay, before the Select Committee on Public Moneys. Mr. Anderson, in reply to Question 2114, stated, that "the vote for the purchase of stores is taken, not for the expen-" diture of stores in a year, but for the purchase of stores to be " placed in the storehouses; therefore, if the Admiralty wanted to " expend more they have nothing to do but to open their stores; " they need not play any tricks with the money. They have full " power to spend more for stores than Parliament has voted for the " purchase of stores." "Undoubtedly they can do that if they " please to do it." He did not see "what power you can place over " the executive power in a matter of that kind." "It would be a " very difficult matter to show the stock in hand and the liabilities " incurred. The Admiralty cannot very well postpone the payments, " unless their contracts are so framed, but there is generally a " specified period for making such payments; prompt payment is " the rule of the department. They can undoubtedly frame their " contracts for that, and could receive the articles, and the expen-" diture would appear in the next year." "The actual sums which " would appear voted, would not be the real sums which had been " expended." "In their case the expenditure for supplies, the real " expenditure is not the purchase, it is the actual consumption of " the stores and the labour, which Parliament places entirely at the " disposal of this department." "Nor do the payments represent " these." "Parliament does not vote money for that object, it does " not say you shall spend so much for stores in the year." "It " merely says, we grant you so much for the purchase of stores, and " those stores may not be expended for years."

In reply to Question 2112, by the chairman, Sir Francis Baring, as to "Parliament being simple enough to suppose that that repre-" sents what the expenditure really is," the reply was, "No; after " the war there must be a great accumulation of stores, and the first " thing to be done ought to be to consume the extra stock, and not " to ask for additional money from Parliament to make fresh pur-" chases; therefore, after a war, the first vote would be smaller than " the expenditure of the year in which that vote was taken." Mr. Hoffay, in reply to Question 2723, from the chairman, Sir F. Baring, as to the existing appropriation audit being sufficiently stringent, replied "that it might be evaded by a department, by the mode " of forming contracts, and by the diminution of stores." In answer to a question from Sir James Graham, "Have you reason " to believe that it has ever been so evaded since the passing of " the Act?" the reply was, "I believe that you may live upon " your stores, and make a saving on the aggregate grants, and *vice* " *versâ*, without much difficulty." The remedy, he considered, for all this was, "to have, in addition to the general measures as "sketched out, a somewhat closer scrutiny of the estimates at the "Treasury; the different votes ought to be inquired into, and "returns might be called for, if necessary, of the stock, probable "consumption, &c."

The above are the views of able and experienced financial officers, who, fully alive to the absence of financial control in respect to expenditure on stores, have failed to indicate the real remedy, and which I believe to be secured by adopting the French forms.

The prominent protective measures are, to draw out allotments of the quantities of all stores required to be kept up for the several branches of the service, based on as an exact knowledge as can be obtained of the probable requirements, under various conditions, present and future, by which the quantities to be annually procured should be regulated; take stock by annual verification of a part (as a whole this is impossible); ascertain the yearly quantities expended; replace, if necessary, the issues by new supplies limited, if possible, to the value of stores expended, and by money valuations, as in France, bring the control over loose expenditure of stores by quantity, out of the range of the department charged with the custody and control of the stores, by means of money values affixed to remains, receipts, and issues; separate by account and maintain naval ordnance and stores, from those of the army, or, if blended, let the naval estimates bear the cost of the articles actually supplied. Finally, let accounts be prepared to show the whole of the national assets, as proposed in Mr. Jellicoe's able paper, both values and extent, at the beginning and close of the year, divided under distinct heads, with the additions and diminutions during the year. The accurate accounting thus obtained will thoroughly expose the store transactions of the State, now hidden under the loose accounting by cash alone paid into, and paid out of, the chests, millions* of property will thus be brought to light, and the yearly accounts will keep all wasteful outlay under control.

XXIII.—*Efficient Organisation of French Departments, as shown in that of the Army.*

I have shown that to secure a good financial system the French require not only a good departmental organization, but also various checks independent of the department, in order to enforce a sound control over the financial transactions. If we examine the arrangements for the action of the French legislature, we cannot fail to arrive at the conclusion that the power of the chambers, through the aids supplied, is more definite and precise over the financial demands than that of our House of Commons. If the policy of the empire and the commercial system of France could be freed from complications, as in our own country, then, with its existing careful financial administration, a great future would be in store for that fine country. The marked feature in the French system is the thorough completeness of all their arrangements; the great or small affairs being equally cared for.

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* I calculate the value of the French naval and army material and assets at 80 millions sterling. I suppose we may double our values.

For example, the military constitution of the French army is free from many of our complications, and presents an example which may be examined with some advantage to our own country; not only as a military force, but also as to its efficient financial arrangements, thereby proving the compatibility of such a combination.

It is important to show how this combination promotes military efficiency. The French financial arrangements require the division of the budgets of expense into ordinary and extraordinary. The army is financially estimated for on what is termed the peace establishment, being so organized as to admit of prompt and large expansion to the war establishment in case of war. This army system has undergone of late years alterations in detail, but is, in the main, just what it was when established in the reign of the first Napoleon, and reorganized by Soult, when minister of war under Louis Philippe. The peace establishment, as provided for in the ordinary budget, though exceeded during Louis Philippe's reign, will be found to have been often exceeded under the second empire. The expansive power of the army, as well as its economy in proportion to the strength maintained, have, under both dynasties, been fully tested. During a few years of the present Emperor's reign, the normal army strength has, in the form of a war establishment, often been added to. Even when the actual effective strength has been nearly double the fixed peace establishment, as during the war with Russia, the peace establishment has been the one upon which all calculations of expenses in the ordinary army budgets have been based, and the additional war charges separately estimated, in order that Government might, at the end of the war, or when the necessity for the increased strength ceased, revert immediately to the peace strength and peace expenditure, without the great difficulty that we find with our one estimate, providing for both usual and unusual outlay.

The French claim for their army system the merit of having provided for efficient maintenance of the army at the greatest needed strength, and at the smallest cost, during the very opposite states of peace and war. This year's French military budget, for 1867, shows that the money calculations of the peace establishment are made on 389,604 of all ranks, whilst of these the rank and file number only 207,990. The relative total strength of all grades of our army can only be judged of, in contrast with that of France, by the number of soldiers in each army. The total of all ranks of our army cannot from our estimates be even approximately ascertained. According to our army estimates for 1866-67, we have, including the force in India and the Colonies, 173,879 rank and file, only 34,111 rank and file less than the French, and even this difference might be lessened if we did not omit men of some branches, whom the French would enter with the rank and file.

The French reports carefully show, that which the English reports never supply, the result of the year's operations as to the excesses or deficiencies on the fixed strength. The Government, by enforcing a careful analysis of the daily pay-lists, determine the exact numbers of different grades that have been kept up and paid by the State, and form a check on the estimated strength. The official reports state the average daily numbers paid during the whole year, called the effective or paid strength; a sketch of the results may prove useful.

The 1847 ordinary budget,* prepared and passed in July, 1846, during Louis Philippe's reign, proposed an army peace establishment of 339,765 officers and men, with 81,670 horses, but a war establishment of 381,429 officers and men, with 83,277 horses, was authorised; the effective strength paid and kept up was 368,082 officers and men, with 70,860 horses. Since that year the peace and war establishments have varied, as also the paid effectives. In 1849 the peace establishment was raised to 380,824 officers and men, and with the war strength to 444,414, but the effective strength in officers and men was 438,471. In 1852 the peace strength was fixed at 398,074 officers and men, with the war strength at only 390,142; the paid effectives fell below both, to 375,206. In 1853 the peace establishment was the same as the war strength, viz., 362,151 officers and men; but in this year the paid effectives also fell below, being only 349,997. The lowest peace establishment in any one year between 1847 and 1857, was the one fixed for 1854, being only 350,997 officers and men. Unfortunately the Crimean War required in that year a war establishment to be fixed at 488,063, and of that strength 470,789 officers and men were paid. In 1855 the peace establishment was the same as in 1854, but the war establishment was fixed at 600,000 officers and men, and of these, 567,114 were actually in pay. In 1858 the peace and war establishments were again alike, viz., 392,400, but the effectives in pay were only 378,800. In 1859 the Italian War required the peace establishment of 1858 to be raised to a war establishment of 525,060, but 547,287 were in pay. In 1863 the peace establishment was 400,000, with a war establishment of 420,000, but the effectives in pay were 428,352, being again higher than the war establishment.

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* Appendix, Table IX, p. 443.

The peace establishment for 1867, now before the chambers, is reduced to 389,604 officers and men; but until the official reports of the actual operations of the year are published, the war and effective strength cannot be stated for this or any year later than 1863. The French minister's report on the War Office transactions for the year ending 31st December, 1864, is no doubt ready before this, and available for the information of the deputies, bringing the information as to the actual strength of the army down to a later date than yet supplied to our House of Commons. Our audited army account for the year ending 31st March, 1864, is the latest in our possession.

The above details of strength composing the French army establishments for peace and war as proposed, and as actually maintained, show how fully the French Government make known those details of military force which are so studiously concealed in England. Parliament and the nation only learn by chance questions put to the Secretary of State for War, that the strength of the army as voted, and for the payment of which funds were granted, has not been made good, because a sufficient number of men could not be got to enlist.

It will be noticed that during the long interval of years from 1847 to 1866, the Crimean and Italian wars severely tried the principles on which the organisation of the French peace establishment was based, seeing that the army was augmented in 1855 to 600,000 of all ranks, with 125,650 horses, and by 1858 had been reduced to 392,400 of all ranks, with 83,180 horses; but again augmented for the war in Italy to 468,000 of all ranks, with 103,500 horses, being again reduced before 1862 to 420,000 of all ranks, with 85,705 horses.

These reports explain a further advantage of fixing the peace establishment below the actual strength which the exigencies of the public service may occasionally require to be maintained. According to the French war minister's report on the results of the year 1863, the French army, during that year (1863), fixed at 400,000 of all ranks, sufficient for the peace duties in France and Algiers, was increased, in order to carry out the policy of the empire, and was located at the following places; the total war and peace strength being as below, according to the average of the year, taken from the pay lists:

	Officers and Men of all Ranks.	Horses.
Interior of France	323,715	65,543
Rome	14,981	1,338
Mexico	32,682	6,379
China and Cochin China	1,543	6
Algeria	55,431	10,851
Total	428,352	84,117

By the above distribution of the French army, the strength of officers and men, though only 28,352 in excess of the peace establishment, is yet able to supply 59,206 officers and men and 7,723 horses for the expeditions to Mexico, Rome, and China; that is to say, the ordinary peace establishment is able to spare an army of 30,854 of all ranks, and 7,723 horses, which, with the extra war strength as above of 28,352 officers and men, makes up the above large force on service in Mexico, Rome, and China. An examination of the details bring to light another important feature, that the cadres of companies and battalions sent out of France are greatly diminished, by the simple measure of raising the companies to 120 private soldiers. With these facts before us, its power for efficient expansion has been fully proved, and the French army may be considered to be organised on a sound military system. This is apart from the question of the conscription, for, with judicious arrangements, there would be no difficulty in recruiting our army.

The question now arises as to the probable reduction which may take place in the French army, so as to approximate its actual strength to the reduced peace establishment lately fixed by the Emperor. The garrison hitherto occupying Rome is in progress of being relieved; this force, with the troops from Mexico, will then make available for reduction a force of 47,663 of all ranks, and thereby easily enable the French Government still further to bring down the strength of the army, even below the recently reduced peace establishment of 1867, fixed at 389,604 of all ranks, with 78,472 horses.

The recent measure of lowering the peace establishment of the French army involved an important change, that of reducing the cadres of regiments and companies, and thereby effecting a larger diminution in the eventual expense than would have been obtained by a mere lowering of the numbers of the army. The saving therefrom, spread over all departments, will reduce the army cost to the extent of nearly three-quarters of a million; and at once, as the French estimates fully show, more than half a million sterling is cut down in the estimate of the year. Compare this with the intended reduction of two companies of infantry in the regiments of our army, by which no diminution of cost can be seen to be obtainable either now or hereafter. On the contrary, the course followed in England seems calculated to increase our future military charges, by the very mode in which the reduction of the officers is proposed to be carried out. The present apparent diminution is made partly by the transposition of the charge from one vote to another vote of the War Office estimates, a practice frequently resorted to without detection by the House of Commons. The apparent economy has been partly produced by diminution of resources in stores, whilst the requirements on the services of the men of the army appear to be far in excess of the available military means. The French army, on the other hand, is reduced to an extent far greater than that of England, and in a way severely testing the Emperor's prestige, yet retaining its efficiency for expansion, with greater and more real economy than with us.

XXIV.—*Relative Economy in Administration of Army Expenditure in France and England.*

The French army, judging from past events, has been proved to be capable of rapid expansion and contraction, and in this view its efficiency as a military body is of the highest character. Now the results of the inquiries instituted into the cost of this great force afford strong corroborative evidence in favour of the French claim, that its economy is in accord with its efficiency. I must briefly state the expenditure on army and navy, in order to show the degree of economy under the French and English systems, by comparing the very considerable amounts of money laid out by the respective countries on their war forces. The questions involved in the relative military efficiency (irrespective of cost) of the army and navy of the two countries, have occupied the time and thoughts of statesmen and of army and naval commanders and officers of experience. It has often been assumed that in strength and military organization the French army is far superior to that of England, the navy of France has often been said to equal ours as to the power of its ships of war. Without questioning too deeply the accuracy of either claim, I may accept the admissions as to the relative state of power of the naval and military forces of the two nations, in order to enable you to see how the respective countries control the expenditure incurred thereon.

The available accounts of actual expenditure for France extend from 1847 to 1863; and for England to 31st March, 1864.* The lowest expenditure by England during any one of the years of that period, on the naval and military forces, amounted to about fifteen millions sterling, that of France being about sixteen millions; and the year common to both was 1851. The expenditure of France on army and navy in 1847, the last year of Louis Philippe's reign, was about twenty millions, against eighteen and a half millions in that year for our forces. The expenditure on the two services, highest in any one year of the series, for the respective countries, was close on fifty-three millions by us, against forty-three and a half millions by France, and again this *maximum* occurred in the same year, viz., 1855.* The expenditure for the year previous was equal in both countries, and amounted to about thirty millions. Between 1846 and 1853, a period of eight years, the average of the total expenditure of France on army and navy was close on eighteen millions a year, whilst that of England was nearly seventeen and a half millions. The expenditure of England for the two services since the war with Russia, on an average of the ten years from 1st April, 1854, to the 31st March, 1864, has been about thirty millions, and the like average expenditure deduced from that of France for nine years, from the beginning of 1854 to the end of 1862, also shows close on thirty millions. Our naval and military expenditure bore the proportion of about seven millions on the navy, to about nine and a half millions on the army, calculated on the eight years' average expenditure from 1847 to 1854; and, for the ten years since then, the naval charge has been about thirteen millions to seventeen millions on the army.

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* Appendix, Table X, p. 444.

But there are errors in these averages. The marine department of France includes colonial expenditure, charged by us to a separate account. The stated expenditure on our army is at least a million below the actual outlay, as recoveries are deducted in diminution of cost. The expenditure, as above stated, may indicate nearly enough the economy with which the two countries control the charges for the two great branches of the public service; and, keeping in view the vastness of the French army and the approximate equality of the naval power, it may justly be said that France is far more economical.

During six years of the period that the Emperor has held authority in France—from 1858 to 1863—for which I have the French official reports complete and available, the actual military expenditure for all army services, ordinary and extraordinary, has, in several years, fallen below the cost, fourteen millions, for our own army, as recently stated in our army estimates for the year 1866-67; and if the forces from Rome and Mexico are withdrawn, the expenditure will then be reduced below that for our army. Further, that vast as was the war establishment of 600,000 officers and men, to which the French army was raised in one of the years of the war with Russia, and though far in excess of the strength at which our own army was proposed to be kept, yet the highest actual military expenditure of the French during one year (1855) of that war was about thirty-five millions, or but little in excess of the highest expenditure, about thirty-three millions, for one of these years (also 1855) for our much smaller army. But if all the charges paid by England in years subsequent to the Russian war for the expenses of that war, amounting to very large sums, were brought into the accounts of the years to which they properly belong, I believe that the largest amount of expenditure of France, on their large army, would be found to be actually less than our highest year's outlay on our smaller army. These financial results, in respect to the expenditure of France on their army, are but little known in England, but deserve to be well looked into, seeing that the extravagant expenditure so frequently urged against France is not borne out by the facts.

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* Appendix, Tables X and XI, p. 444.

Far too much money may be, and indeed is, spent in France for the glory of the nation, but if rightly spent in order to maintain the power of the Emperor for the good of the people, then the money spent is well and carefully controlled in its details; and honourable testimony is given in favour of the Emperor's influential support to this end. The good order, and really powerful and efficient check over the application of the extensive army funds, which so markedly belong to the French system, secure for France an amount of economy which we do not obtain; the people of France fully appreciate this good. A like result may be secured in this country, and a large diminution in our military expenditure is practicable, but this can only be safely effected when the nation fully understands, by the clearness of its budgets and exactness of its accounts, the cost of the Indian, Colonial, and Home services. It is necessary to learn, not only how economy can be carried out, in what particular directions the expenditure may be contracted or diminished, but how it ought to be increased, in order to secure that efficiency for peace or war; the most difficult of all economies, but the most useful which a nation should know how to practice. This is to avoid waste when necessity requires army augmentations, and this knowledge economises expenditure when peace is established.

The important principle on which the French army system is based, productive of great results to France, would, if well understood, prove equally beneficial to England. But it requires to be thoroughly understood, and, to be successful, it must be as strictly adhered to by us as it has been by the people and Government of France. It is a principle easily understood when enunciated, that at all times we should maintain an entire separation between ordinary and extraordinary military expenses. The ordinary estimate should only comprise the carefully considered and lowest charges for that smallest army strength which will allow of a suitable organization for maintaining in time of peace—with a high degree of military efficiency—the *minimum* strength which can readily be increased to the *maximum* force which the country can raise or support in case of war, but with an aptitude for partial augmentations to meet temporary wants; in all such cases at the least possible cost to the country. The extraordinary expenses to cover the charges for the strength in excess of the peace strength, for stores in excess of the current consumption, and other purposes, which add so much to the military expenditure when the peace establishment is departed from. All these extraordinary expenses should be of a character and in a form, which will allow of prompt diminution as soon as the necessity for them is at an end. But before any extra expenses are incurred, there should be set forth in an estimate, and invariably shown, the exact purposes to which the money is to be applied, for what persons, or for what stores. The most reliable estimate which can be drawn out is the one which sets forth the proposed outlay most nearly after the form in which the actual outlay will appear in the bills of the claimants. In addition, Mr. Anderson has urged, "the "best, if not the only means, of bringing under the control of "Parliament the expenditure of every department of the State con-"sists in an effective and uniform system of public accounts and "an independent audit of expenditure upon vouchers after pay-"ment."

XXV.—*Constitution of the War Departments of the Two Countries.*

As in close connection with the above, I would venture a remark —applicable to the other ministerial departments of the Government—that the constitution of our War Department militates against real efficiency and economy by rendering impossible any sustained efforts to either end, being ever made, or, if undertaken, causing them to prove either abortive or short-lived. All experience shows that efficiency and economy are products of slow growth, and our political or parliamentary Government cause frequent changes in the person of the War Secretary of State, that no one Secretary of State can expect to hold power for the time needed to sustain the measures required for producing permanently improved results, and all totally irrespective of his personal efficiency for the control of the army; this difficulty ought to lead to an adaptation of the administrative machinery to the business to be controlled, so that these unavoidable parliamentary changes in the head may not continue to produce the bad consequences we daily experience.

The French military administration is an example for us to follow; though an officer of high military rank and great experience is invariably placed at its head, yet in its War Department a complete division of duties exists. It is divided into sections, and each section is under an officer of high permanent rank, and all are placed in subordination to the minister of war. There we find permanent administrators with distinct duties, but having individual responsibilities to the country, sovereign, and minister, for the right performance of the duties assigned. In France there are separate branches and defined responsibilities, though far less frequent changes there occur in the appointment of minister of war than in England, and apparently far less necessity for so distributing the War Department duties. In England all action is made dependent on the frequently changed Secretary of State. In England we have now the seventh Secretary of State since the first appointment of the Duke of Newcastle, that is to say, in a period of eleven years; a failure in passing a political measure might soon give us an eighth war minister.* In France we see the names of only three ministers who have been at the head of the War Office since 1851, two besides the present war minister. All three are known to have been experienced military officers. In England, except General Peel and Lord Panmure, none ever belonged to the army. The necessity for the English war minister having professional knowledge is greater, owing to the interference in details connected with discipline.

The necessity of providing for even greater than Parliamentary control over our army, by a new Secretary of State, of the views of the political party in power—a necessity which is not recognized in France—commends to our adoption the many excellent arrangements for the division of the War Office business which exist in the French War department, in order to compensate for the party contingencies and professional inexperience of the selected statesmen for our ministers of war; nevertheless it is, even irrespective thereof, an admirable system of a right division of business responsibilities.

The French War department is divided into seven great *directions*, and subdivided into twenty-five bureaux, in which all the army affairs are carried on, in addition, the minister of war has a private personal cabinet and a strong staff of experienced officers to aid him in the performance of the special duties requiring the direct attention of the minister. Besides the seven great establishments formed for the executive administration of army affairs, there are special and permanent committees and commissions formed for considering all those numerous questions involving changes in the existing army system; these changes require calm thought, which overworked officials cannot possibly devote, without risking the right performance of their daily business. These committees are twelve in number, composed of officers specially appointed. They are merely consultative, to advise on the system and rules by which the executive officers must be guided in the discharge of army duties. The army business is transacted and carried on by the heads of the seven *directions*, under responsibilities exact and clear for their right discharge, and the minister of war is therefore not overburthened, as our Secretary of State is, with details, nor obliged to allow his name and authority to be used on every occasion, however trifling. In addition, a section of the Council of State composed of experienced officers oversee the whole of the affairs of the War Department, including the duties of the war minister, and invariably examine the army budgets of expense.

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* This has happened. The change has occurred, and we have now the eighth Secretary of State, with another change in the Under Secretary, who, I hear, is the twentieth. Both, happily, are this time soldiers.

One of the most useful elements in an organised system is wanting in our War Department. The great secret of enforcing the right discharge of official functions is to place on individuals the responsibility of thinking, and of showing that they do think rightly, by acting on their own thoughts, with entire responsibility for results, both to the Secretary of State for War and to the country. The dread of entrusting any separate authority to any one, subordinate to the Secretary of State, is at the root of all the shortcomings of our War Department. At present all affairs, however unimportant, are passed in the War Office, and any measure, however objectionable it may appear to the nation or army, is ordered in the name of the chief. Now the most certain process for destroying foresight, and to encourage the carrying out of bad measures, is to permit officials to act in the name of the Secretary of State, who, without any professional experience or knowledge of details, must often assent to bad arrangements, or allow that most dangerous of all courses, the issuing of orders in his name, without the previous authority of the head being given. There is no difficulty in defining functions for each department within which the chief of each branch may act, there is no more effectual means of checking wrong acts, than to cause the doer to put his name to the order, with the responsibility which signing a paper invariably creates.

I may be asked, and with reason, whether I admit of the existence of defects in the French military system. I frankly acknowledge their existence. But, after allowing for all defects, and even allowing for others existing of which I have no knowledge, I cannot but avow that, contrasting the many excellencies in the French system with the numerous defects in ours, I feel that we are wanting to ourselves in allowing our inferiority to continue.

XXVI.—*Value of Statistical Compilations.*

There is, however, in connection with this subject, one very valuable suggestion, made ten years since by Dr. Farr, which I have only lately met with. It refers to the necessity of compiling statistics of the army and navy, and of the finances. It is a measure I have often wished to see generally carried out, and, indeed, it is one which, in ignorance of that alluded to, I brought under the consideration of Lord Canning, when Governor-General of India, and applied to some branches of the public service in India. Circumstances arose to prevent that able statesman from carrying out the suggestion, to its fullest extent, though it received his approval; but if the suggestion of our colleague Dr. Farr, made several years prior, could have been quoted in support, the recommendation for the appointment of statistical branches for the preparation of official statistics of finance, army and navy, the suggestion for this arrangement, coming from such a quarter, might alone have sufficed for its adoption; the necessities of the time required the measure.

Several of the defects brought under your notice, I see urged by Dr. Farr in support of the compilation of statistical information. I see that Dr. Farr urges the question of a classified view of the "articles in store (in the hands of departments) of those "supplied and destroyed in the year; also the value and cost per "man of all the important items of expenditure, well classified; "that the ordnance supplies to the navy should be written off, and "appear in the navy report; and the value and the annual expen-"diture of stores, ships, arms, and men analysed. The statistics "should show the exact organisation of the army, civil and military; "its classes, its annual recruits, its annual losses by battle, wounds, "diseases, desertions, captures; its physical condition, its sickness, "its punishments, its achievements, and presenting, as regards the "navy, the precise means of the state and changes of men, ships, "dockyards, and establishments of every kind."

So far as the object of this paper applies, viz., to the accounts of expenditure, the practical results which Dr. Farr indicated as desirable to be attained, were, as regards finance statistics, that the "finance operations of the country, now directed, controlled, "and carried on by many separate authorities, should," under the statistical board which Dr. Farr proposed as the instrument for the transaction of the business, "be thrown into a statis-"tical form, from the annual accounts of the revenue, expendi-"ture, debt, and stock of the nation." I have endeavoured to set forth Dr. Farr's suggestions in his own words; and all of us who have had to refer to the voluminous accounts in great detail, which must always exist when extensive operations have to be recorded involving large money transactions, will well appreciate the vast utility which Dr. Farr so justly urges, of "having the whole "scheme of the statistics of the empire, so organised as to exhibit "the principal facts and their relations to one another in a single "volume." The statesman, soldier, politician, economist, and statistical inquirer, can thoroughly appreciate the immense advantage of having the raw materials, as Dr. Farr designates our financial accounts, disembarrassed of the many details which the ordinary system of putting out accounts, requires to surround the facts. These details may, as urged, be thrown into good well-considered forms, the trouble of consulting and using them being greatly diminished by the publication of the necessary calculations from which the results are derived.

There are many other heads enumerated by Dr. Farr, which might be specified, and which at the present day attract public attention, such as the number of the male population for recruiting the army and navy, now solely dependent on the information of the two departments which control these branches, but which in reality is mainly a subject that the Registrar-General's office ought to deal with. Again, we have mention made of the causes operating to require accounts such as the effect of the Limited Service Act on the discharge of soldiers, and the means of inducing them to remain. The sickness and mortality, already so well taken up by the medical branches of the army and navy, are also pointed out as affecting the recruiting of the services, and the influence of disease as bearing on the efficiency of the army in the field, is also dwelt on.

The endeavour made by Dr. Farr to show to the Statistical Congress the average cost of the soldier, deduced from the charges for all branches of the service, is stated to be impossible under the erroneous mode of debiting the whole of the naval expenditure of ordnance stores to the army, without supplying the means of ascertaining the amount due to each department: an important fact, which, until mentioned this year by General Peel, has very rarely been noticed. The Duke of Richmond, in the last century, and the Ordnance Board at the beginning of this, did allude to the arrangement, but Dr. Farr is the first in later times to bring to public notice a financial measure which vitiates the whole of the army and navy statistics. I now venture to say that if these indicated statistics had been compiled by such an independent board as Dr. Farr proposes, a vast mass of important facts would have been brought to light, that must have ensured great economy in expenditure, and much greater efficiency in the public services. There is no greater evil against which the services have to contend, especially those of the army and navy, than ignorance of what we ought to be spending, how we are spending, what we really require to spend, and what we ought to obtain for our spending.

The advantage of statistical compilation would be felt in the drawing out of the voluminous returns of the army and navy. It would, more than any other measure, reduce the innumerable returns now sent in by regiments, ships, divisions, and fleets. The repetition of the same facts, in many separate returns, at many separate periods, to many separate offices, would be saved, the labour of officers and authorities thereby enormously reduced. Many exceedingly complicated figured statements, which require considerable training to prepare, could be cut down to a form so simple that ordinary clerks would be equal to the duty of supplying the details, for a few trained persons to work up. The result would be that information more exact, more complete, and better arranged, would be available for the authorities, and with it a wider and better control could be exercised, and this once secured, I have no hesitation in claiming as a result, greater efficiency and useful economies.

XXVII.—*Conclusion; Improvements Summarized.*

If, in reference to the important points discussed in this paper, I should be called on to say what improvements I have to suggest in our system, I must reply that the subject is too vast, and the details of the working too carefully shrouded in official mystery, for any one individual to venture to offer any but general views. Indeed, the changes which it may be requisite or advisable to make, so much depend on the nature and extent of responsibility to be placed on functionaries of high position, that I can only mention, in a general way, that besides the defects already indicated, the evidence given before the select and other committees, shows that the control of the Treasury over the departmental estimates is ineffectual,—the power of control by the Chancellor of the Exchequer over the great departments weak—the Parliamentary check over proposed expenditure of little utility, either in preventing excesses of expenditure or in enforcing adherence to the sums voted for particular services. The power of departments to use moneys voted for one purpose for another and different purpose, is vicious. The annual Treasury statements are based on credits instead of actuals, and fail to show for what periods the receipts and issues are due; the system of granting imprests for money to meet anticipated payments objectionable—the multiplication of agents for disbursing funds an evil—that large balances remain in the power of individuals—that the audit of expenditure is not made with promptness—the departmental audit a mystery—the powers of the Audit Board, even when enlarged by the bill now passing through Parliament, insufficient to check detailed expenditure of departments. But while I shrink from any further indication of the innumerable defects requiring reform, I trust it will be perceived from the foregoing attempt to illustrate the principles on which the present excellent system of French accountancy is built up, and from the evidence, adduced out of the mouths of competent witnesses and the published accounts, as to the defects and insecurity of the English system, that the object I desire to see accomplished is the reform of our system by an assimilation to—not a slavish imitation of—the French processes of accounting, and only in those points in which the latter are avowedly superior. Such points I conceive to be mainly, that all the financial operations of the State be placed under the great ministers, each having officers of account to aid in the conduct of duties with clear and distinct responsibilities.

First, then, clearly and fully set forth in separate budgets, divided, as in the case of the French army, to represent under minute heads the various branches over which the expenditure spreads—such as the home, colonial, and Indian armies—also that estimates and accounts for the several manufacturing departments, and for the material of the army and navy be separately prepared—that all estimates show the actual expenditure of the penultimate year, in addition to the grants of the previous year, also that separate estimates show the usual from unusual services to be performed, the items under each entry distinctly include charges of a like character so clearly and fully detailed, as to be as nearly as possible, in the form in which the actual charges are expected to occur, and so fully stated as to enable an independent auditor to check the particular charge by the entries in the estimates; declare it illegal to use any funds granted for any one purpose for another, however near they may be connected; require all surplus funds to remain undrawn; provide specially for unforseen services; adopt measures to show when due foresight has not been exercised in anticipating.

Second. In the concentration and consolidation in a condensed form, and within the shortest limit as to time, of all the accounts of the nation, of revenue and liability, income and expenditure, under classified heads uniformly preserved for a series of years, such consolidated account being based on accomplished facts confirmed by an efficient audit, conducted by auditors placed in an independent position, and contrasted with the items entered in the previously prepared budgets and with the actual expenditure of the prior year.

Third. The accounts to prove a truthful record of the actual services performed within twelve months, and the liabilities thereby imposed on the nation, as represented either by the *facts* of money expenditure in liquidation of all the claims thereby established, or of claims established, but not paid, and remaining outstanding for settlement in a future year, after the delay allowed for paying the claims. Preserve a distinction in the current accounts of cash disbursements of the year, so as to distinguish between moneys received and paid on account of services of different years; the income and issues appertaining to each year being shown distinctly, and the services of the *present* and those of the *past* year being separately recorded, in order that the compiled accounts of each year may bear a true relationship to the revenue and liabilities of the year, and prove in fact the financial history of that year.

Fourth. In the cash accounts of the nation, the moneys invested in the purchase of stores and other materials, as well as the moneys expended in the manufacture thereof in Government factories, to be treated as a final expenditure, but the departmental accounts to be so kept as to show the value of all stores actually *consumed* during the year, and thus to be the real *expenditure* for stores of the year, and not the amount of money converted into stock:—this course of accounting being adapted so as to regulate demands for store expenditure, thereby checking waste, deterioration, and unnecessary accumulations of stock, and, above all, preventing the possibility of insufficient reserves being maintained, an evil so likely to be the result of the present practice.

Fifth. Prepare an account of all assets of the nation in each of the departments, showing under the various classes of properties, palaces, docks, arsenals, fortifications, ships, arms, guns, ordnance, projectiles, gunpowder, and any description of stores, the quantities and values both at the beginning of the year and end of the year, and all changes in addition and diminution during the year; the transfers from one department to another, and the transfer in each department from one head to another; the cost of stores converted, the materials and workmanship, and the money cost separate from the real cost or value.

These are some of the changes which it appears to me essential to carry into practical operation. I allow that in the present English system many other changes must be introduced, and although, as the difficulties surrounding all changes are great, and ought not to be undertaken unadvisedly, still, the advantages of those here proposed are so obvious that the propriety of making them ought to be at once considered. The great objection to all reforms in the practice of departments is, that they interfere with the views of many worthy men, and with the smooth current of established routine, well understood by the workers, and, for a time, extra labour must be imposed on them, in order to acquire a knowledge of the changes; moreover, the action of the executive may be partially interrupted, and disorders, if not created, at least imagined, while the changes progress from initiation to completion. This practical objection, though of little real consequence, is not altogether without weight in considering the propriety of making changes, but the remedy is to keep, where necessary, two instead of only one, current line of business flowing. The established course, if conducted under those strongly wedded to the old ways, would follow its accustomed way for a time, and be especially useful in closing arrears; but another, the improved course, would be carried on simultaneously under those interested in the success of the reforms, so as to deal with the facts and transactions of the day on the principles above recorded. The process, when thoroughly carried out by the completion of a year's accounts, will thereby connect the new with the old accounts, producing a new link from which to proceed in future, without fear of confusion.

If asked, however, whether I expect to see all these improvements in the national system of accounts carried out, I reply that, looking to the past, it can hardly be hoped that such great administrative reforms should be effected by the Government of any one party, although many able men have admitted their necessity, advocated them both in and out of Parliament, and attempted to make them while in office. Indeed, I believe that the statement made more than ten years ago, by an able and intelligent public officer, in regard to a total change in our system of accountability, "we are "not prepared to take the leap," is equally true at the present time, and opposite political parties are generally so unwilling to forward the measures initiated by their opponents, however beneficial to the country, that I fear but little progress will be made in this respect, until a complete change is forced on by the occurrence of some great disaster, or by some great crisis in our national affairs rendering a reform imperative.

APPENDIX.

I.—*Table showing Discrepancies between Total Amounts for Army and Navy Services, Entered in Finance Account of United Kingdom, and Audited Expenditure for these Services as certified to by Commissioners for Auditing Public Accounts.*

[000's omitted.]

Years.	Total Expenditure, including Transport, but exclusive of Packet Service, for all Naval and Military Services.		Difference.		Audited Expenditure shows a Net Difference less than Amount in Financial Accounts.
	As Entered in Finance Accounts.	As Entered in Audited Accounts by Audit Commissioners.	More than Financial Accounts.	Less than Financial Accounts.	
	£	£	£	£	£
1856–57...	34,270,	35,781,	1,511,	—	—
'57–58....	24,996,	23,181,	—	1,816,	—
'58–59....	22,510,	21,821,	—	689,	—
'59–60....	26,739,	26,902,	163,	—	—
'60–61....	31,346,	29,409,	—	1,936,	—
'61–62....	29,452,	29,475,	22,	—	—
'62–63...	27,665,	27,249,	—	416,	—
'63–64....	25,460,	25,649,	189,	—	—
Total	222,438,	219,467,	1,885,	4,851,	2,972,

Note.—The difference shows a total gross amount of 6,741,705*l.*

II.—*Table of Expenditure contrasting Outlay on several Ministerial Services, with Credits opened for the Service of the Year* 1863, *comprising the Period from* 1*st January*, 1863, *to* 31*st August*, 1864.

[000's omitted.]

	Credits Granted.	Payments Made.	Excess of Credits over Payments.
Budget Ordinaire—	fr.	fr.	fr.
Public debt and dotation	675,719,	668,640,	7,078,
Ministère d'Etat	2,969,	2,848,	121,
„ de la Justice	32,916,	32,736,	180,
et des Cultes	46,736,	46,529,	208,
„ of Foreign Affairs	13,057,	12,863,	195,
„ of Interior	55,427,	55,123,	304,
„ of Finances	27,777,	24,901,	2,876,
„ of War	384,531,	376,587,	7,944,
Government of Algeria	14,351,	14,194,	157,
Ministère of Marine and Colonies	151,421,	146,120,	5,301,
„ of Public Instruction	19,463,	18,908,	555,
„ of Agriculture, Commerce, and Public Works	76,250,	75,046,	1,204,
„ of Household of Emperor and Fine Arts	12,523,	12,479,	43,
Expenses of administration	227,324,	216,513,	10,811,
Refunds, restorations, non-valuers, premiums and discount	70,107,	66,853,	3,254,
Total of budget ordinaire	1,810,571,	1,770,340,	40,231,
Budget of special resources, total	263,812,	240,234,	23,578,
Budget Extraordinaire—			
Ministère d'Etat	—	—	—
„ de la Justice et des Cultes	3,820,	3,736,	84,
„ of Interior	4,870,	4,270,	600,
„ of Finances	2,700,	1,637,	1,063,
„ of War	88,896,	84,083,	4,813,
Government of Algeria	4,357,	4,343,	13,
Ministère of Marine and Colonies	83,631,	75,348,	8,283,
„ of Public Instruction	300,	300,	—
„ of Agriculture, Commerce, and Public Works	95,239,	94,429,	811,
„ of Household of Emperor and Fine Arts	8,350,	8,349,	1,
Total of budget extraordinaire	292,163,	276,495,	15,668,
Total of three budgets	2,366,546,	2,287,069,	79,477,

III.—*Table of Revenues, showing Estimated Receipts, Claims Established, Recoveries Effected, and Balances to Recover, for the Service of* 1863, *comprising the Period from* 1*st January*, 1863, *to* 31*st August*, 1864.

[000's omitted.]

Designation of the Resources.	Estimated Receipts.	Claims Established on behalf of the State.	Recoveries Effected.	Balance to Recover, or Difference between Cols. 2 and 3.
	fr.	fr.	fr.	fr.
Contributions direct (fonds généraux)	309,178,	311,180,	311,180,	—
Registration, stamps, and domains	409,979,	422,493,	417,517,	4,976,
Produce of forests	41,434,	42,073,	41,620,	452,
Customs and salt	185,714,	195,329,	195,329,	—
Contributions indirect	532,772,	578,433,	577,819,	613,
Produce of post office	66,452,	72,940,	72,940,	—
Universities	2,846,	3,154,	3,154,	—
Revenues of Algeria	18,734,	19,539,	18,609,	930,
Resources on civil pensions	13,887,	14,706,	14,706,	—
Reserve sinking fund	99,210,	118,673,	118,673,	—
Miscellaneous resources	46,737,	57,142,	57,142,	—
	1,729,943,	1,835,662,	1,828,691,	6,971,
Add—				
"Fonds généraux" not employed at closing previous service	—	—	51,	—
Total	—	—	1,828,742,	—
Deduct—				
Short, recovered, carried to 1865 service, to pay expenses of cadastre at closing of 1863 service	—	—	100,	—
The ways and means of the budget for 1863, fixed at	—	—	1,828,642,	—
Budget of receipts of special resources, Statement A	—	—	240,234,	—
Budget extraordinary of receipts, Statement B	—	—	196,062,	—
Grand total of three budgets	—	—	2,264,938,	—

STATEMENT A.—*Budget of Revenues from Special Resources, showing Estimated Receipts, Claims Established, Recoveries Effected, for Service of Year* 1863, *comprising Period from* 1*st January*, 1863, *to* 31*st August*, 1864.

[000's omitted.]

Designation of Resources.	Estimated Receipts.	Claims Established on behalf of the State.	Recoveries Effected.
	fr.	fr.	fr.
Contributions direct (fonds spéciaux)	202,717,	202,717,	202,717,
Produits éventuels departmentaux	33,759,	33,759,	33,759,
Special resources for primary instruction	1,310,	1,310,	1,310,
Miscellaneous special produce	1,867,	1,867,	1,867,
Total	239,654,	239,654,	239,654,
Add—			
Funds unemployed at closing of 1861-62 services	—	—	24,157,
Total	—	—	263,811,
Deduct—			
Amount carried to 1864-65 services	—	—	23,577,
Available ways and means of budget of special resources for 1863 service	—	—	240,234,

STATEMENT B.—*Budget of Revenues from Extraordinaire Resources showing Estimated Receipts, Claims Established, Recoveries Effected, for Service of Year* 1863, *comprising Period for Collecting, from* 1*st January*, 1863, *to* 31*st August*, 1864.

[000's omitted.]

Designation of Resources.	Estimated Receipts.	Claims Established on behalf of the State.	Recoveries Effected.
	fr.	fr.	fr.
Thirty years' obligations	54,500,	64,984,	64,984,
Payment by chemin de fer d'Orleans	1,000,	1,000,	1,000,
" " Lyon	2,000,	2,000,	2,000,
China indemnity	10,000,	10,000,	10,000,
Cochin China indemnity	—	1,234,	1,234,
Arrears of rentes held by sinking fund in 1863	51,648,	51,208,	51,208,
Sale of lands for construction of opera	2,500,	—	—
Proceeds of railway obligations negotiated	—	16,740,	16,740,
" 1,429,620 frs. of 3 per cent. rentes	—	32,021,	32,021,
Deduction on special fonds, for defence against inundations	—	4,698,	4,698,
Balance of 1859, loan applicable to great public works	—	3,352,	3,352,
Funds in aid contributed for public works	—	8,736,	8,736,
Receipts from balances of loans from 1854 to 1859	—	85,	85,
Total	121,648,	196,062,	196,062,

IV.—*Table of Expenses Established against the State, Payments Made, and Balances to Pay during the Year* 1863, *viz., from* 1*st January to* 31*st December*, 1863, *distinguishing for what Service Year.*

[000's omitted.]

Public Expenses.	Claims Established against the State.	Payments Made by the State.	Balances to Pay.
Service of 1862—	fr.	fr.	fr.
Service ordinaire	313,237,	307,149,	6,087,
Extraordinary works	25,948,	25,704,	244,
Service of 1863—			
Budget ordinaire	1,782,518,	1,602,360,	180,157,
„ of special resources	257,575,	188,022,	69,558,
„ extraordinaire	292,341,	179,063,	113,277,
Service of 1864—			
Budget ordinaire	14,162,	14,162,	—
„ of special resources	659,	659,	—
„ extraordinaire	57,	57,	—
	2,696,497,	2,317,176,	369,320,
Add—			
Special services under 26 heads	—	449,544,	—
Grand total	—	2,766,720,	—

V.—*Table of Revenues showing Claims Established on behalf of the State, of Departments and Communes, with Revenues Effected and Balances to Recover during the Year* 1863, *viz., from* 1*st January to* 31*st December, Distinguishing for what Service Year.*

[000's omitted.]

Contributions and Public Revenues.	Claims Established on behalf of the State.	Recoveries Effected.	Balances to Recover.
Service of 1862—	fr.	fr.	fr.
Ordinary services	80,957,	74,564,	
Service of 1863—			
Budget ordinary	1,844,055,	1,769,210,	
„ of special resources	234,113,	226,724,	
„ extraordinary	195,294,	148,253,	
Service of 1864—			
Budget ordinary	3,174,	3,174,	
„ extraordinary	4,388,	4,388,	
Total	2,361,981,	2,226,313,	135,669,
Deduct Service of 1862—			
Services extraordinary	9,182,	9,182,	—
Total of contributions and public revenues	2,352,799,	2,217,130,	—
Special Services—			
Total of 21 miscellaneous heads of receipts	—	412,392,	—
Grand total	—	2,629,522,	—

VI.—*State of the Progress of the Auditing of the Army Expenditure as shown by the Ledger Balances.*

[000's omitted.]

Years.	Expenditure for Army Services Audited. Year ending 31st March.			Expenditure for Ordnance Services, Audited. Year ending 31st March.			Total Expenditure for Army and Ordnance Services Audited. Year ending 31st March.		
	Prior to.	After.	Total for.	Prior to.	After.	Total for.	Prior to.	After.	Total for.
	£	£	£	£	£	£	£	£	£
1849....	1,280,	5,337,	6,617,	1,788,	1,188,	2,976,	3,068,	6,525,	9,593,
1850....	1,188,	4,922,	6,110,	1,520,	1,033,	2,553,	2,708,	5,955,	8,663,
'51....	1,233,	4,856,	6,089,	1,201,	1,110,	2,311,	2,434,	5,966,	8,400,
'52....	1,160,	4,982,	6,142,	1,183,	1,136,	2,319,	2,343,	6,118,	8,461,
'53....	1,256,	5,174,	6,430,	1,349,	1,067,	2,416,	2,605,	6,241,	8,846,
'54....	1,130,	5,155,	6,285,	1,818,	1,174,	2,992,	2,947,	6,330,	9,277,
'55....	1,097,	7,126,	8,223,	3,725,	1,681,	5,406,	4,823,	8,807,	13,630,
'56....	2,348,	18,002,	20,350,	8,741,	3,252,	11,993,	11,089,	21,255,	32,344,
'57....	—	—	—	—	—	—	8,694,	12,422,	21,116,
'58....	—	—	—	—	—	—	8,835,[a]	9,382,[i]	13,217,
'59....	—	—	—	—	—	—	3,816,[b]	8,711,[j]	12,527,
1860....	—	—	—	—	—	—	3,586,[c]	10,572,[k]	14,140,
'61....	—	—	—	—	—	—	6,661,[d]	9,625,[l]	16,286,
'62....	—	—	—	—	—	—	4,403,[e]	11,529,[m]	15,932,
'63....	—	—	—	—	—	—	4,086,[f]	—	15,419,
'64....	—	—	—	—	—	—	—	8,507,[n]	14,890,
'65....	—	—	—	—	—	—	1,510,[g]	7,606,[o]	14,640,
'66....	—	—	—	—	—	—	2,232,[h]	—	—

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[a] Prior to 31st January, 1858.
[c] „ 31st December, 1859.
[e] „ „ 1861.
[g] Up to 30th September, 1864.
[i] Subsequent to 31st January, 1858.
[k] „ 31st December, 1859.
[m] „ „ 1861.
[o] „ 31st March, 1865.

[b] Prior to 31st January, 1859.
[d] „ „ 1861.
[f] „ 31st December, 1862.
[h] Up to 31st October, 1865.
[j] Subsequent to 31st January, 1859.
[l] „ „ 1861.
[n] „ 31st March, 1864.

VII.—*Table showing the Actual Disbursements by the French*

[000's omitted.]

Service of the Year.	France.	Algeria.	Rome.	Mexico.	China and Cochin China.
	fr.	fr.	fr.	fr.	fr.
1847	265,391,	106,847,	—	—	—
'48	331,636,	92,434,	—	—	—
'49	279,406,	89,907,	12,030,	—	—
'50	244,971,	77,610,	7,832,	—	—
'51	243,257,	69,326,	5,423,	—	—
'52	244,198,	78,482,	5,291,	—	—
'53	244,345,	74,082,	4,949,	—	—
'54	369,505,	76,427,	5,962,	—	—
'55	425,273,	80,579,	4,316,	—	—
'56	415,566,	91,252,	3,081,	—	—
'57	320,150,	92,166,	2,946,	—	—
'58	300,924,	65,730,	2,936,	—	—
'59	297,946,	65,226,	3,787,	—	—
'60	325,353,	64,817,	6,118,	—	10,115,
'61	358,273,	63,745,	11,336,	—	7,466,
Ordinary, 1862	312,130,	56,075,	3,743,	2,572,	—
Extraordinary „	25,615,	1,264,	6,411,	27,120,	1,827,
Total, 1862	337,746,	57,339,	10,154,	29,692,	1,827,
Ordinary, 1863	306,109,	52,247,	6,680,	11,538,	334,
Extraordinary, „	8,741,	1,104,	2,657,	72,012,	372,
Total, 1863	314,850,	53,351,	9,337,	83,550,	707,

VIII.—*Table of Strength of French Army, including all Ranks, showing Actual Distribution according to Paid Effectives.*

Years.	Interior of France.	Algiers.	Rome.	Army of the East (Crimea, &c.).	Italy.	China and Cochin China.	Syria.	Mexico.	Grand Total Paid Effectives.
1847	277,568	90,514	—	—	—	—	—	—	368,082
'48	359,481	75,468	—	—	—	—	—	—	434,949
'49	350,934	68,352	19,195	—	—	—	—	—	438,471
'50	321,218	69,378	13,777	—	—	—	—	—	404,373
'51	316,626	65,887	10,164	—	—	—	—	—	392,677
'52	293,621	71,762	9,823	—	—	—	—	—	375,206
'53	270,255	70,982	8,760	—	—	—	—	—	349,997
'54	347,517	65,620	9,318	48,334	—	—	—	—	470,789
'55	343,210	63,357	6,899	153,648	—	—	—	—	567,114
'56	378,486	81,621	5,384	67,455	—	—	—	—	532,946
'57	309,504	80,936	5,576	—	—	—	—	—	396,016
'58	302,949	70,234	5,617	—	—	—	—	—	378,800
'59	305,797	74,395	7,388	—	159,707	—	—	—	547,287
'60	358,354	68,457	10,373	—	19,515	5,932	2,854	—	465,485
'61	378,775	67,724	18,385	—	—	5,581	3,434	—	473,899
'62	345,317	57,597	17,524	—	—	2,837	—	13,803	437,078
'63	323,715	55,431	14,981	—	—	1,543	—	32,682	428,352.

War Department for the Army Distributed at the Stations below.

[000's omitted.]

Syria.	Italy.	Armée de l'Orient.	Greece.	Baltic.	Total.	Service of the Year.
fr.	fr.	fr.	fr.	fr.	fr.	
—	—	—	—	—	372,238,	1847
—	—	—	—	—	424,070,	'48
—	—	—	—	—	377,856,	'49
—	—	—	—	—	330,403,	'50
—	—	—	—	—	318,006,	'51
—	—	—	—	—	327,972,	'52
—	—	—	—	—	323,377,	'53
—	—	—	—	—	571,174,	'54
—	—	117,567,	444,	1,270,	869,167,	'55
—	—	358,999,	—	—	704,377,	'56
—	—	194,478,	—	—	415,263,	'57
—	—	—	—	—	369,591,	'58
—	244,828,	—	—	—	611,788,	'59
3,289,	38,061,	—	—	—	447,754,	'60
2,872,	—	—	—	—	443,692,	'61
—	—	—	—	—	374,522,	Ordinary, 1862
—	—	—	—	—	62,238,	Extraordinary, „
—	—	—	—	—	436,760,	Total, 1862
—	—	—	—	—	376,909,	Ordinary, 1863
—	—	—	—	—	84,888,	Extraordinary, „
—	—	—	—	—	461,797,	Total, 1863

IX.—*Table of Strength of French Army, including all Ranks, showing Peace and War Establishments, in Comparison with Paid Effectives.*

Years.	Peace Establishment.		War Establishment.		Effectives Paid and Kept Up.	
	Total Officers and Men, all Ranks.	Horses.	Total Officers and Men, all Ranks.	Horses.	Total Officers and Men, all Ranks.	Horses.
1847	339,765	81,670	381,429	83,277	368,082	70,860
'48	333,490	80,251	450,689	97,490	434,949	90,282
'49	380,824	92,410	444,414	96,522	438,471	95,952
'50	403,635	86,457	414,017	91,178	404,373	90,975
'51	382,130	86,120	407,142	84,950	392,677	83,940
'52	398,074	87,566	390,142	86,060	375,206	83,007
'53	362,151	86,442	362,151	86,447	349,997	84,754
'54	350,997	83,343	488,063	107,309	470,789	104,198
'55	350,997	83,464	600,000	125,650	567,114	128,298
'56	370,953	90,191	539,500	122,000	532,946	117,636
'57	370,953	90,191	415,100	91,932	396,016	80,996
'58	392,400	83,180	392,400	83,180	378,800	84,715
'59	384,077	83,180	525,065	106,670	547,287	107,572
'60	392,000	83,180	468,000	103,500	465,485	100,551
'61	392,000	83,180	464,700	94,200	473,899	94,126
'62	400,000	85,705	432,352	88,005	437,078	84,755
'63	400,000	85,705	420,000	88,705	428,352	84,117
'64	400,000	85,705	—	—	—	—
'65	400,000	85,705	—	—	—	—
'66	400,000	85,705	—	—	—	—
'67	389,604	78,472	—	—	—	—

X.—*Table showing the Amounts actually Disbursed in each Year by the Departments of War and Marine of France.*

[000,000's omitted.]

Service of the Year.	War.	Marine.	Total Disbursements of War and Marine.	Approximate Amount in Millions Sterling.
	fr.	fr.	fr.	£
1846	360,	113,	473,	19
'47	373,	129,	502,	20
'48	421,	123,	546,	22
'49	375,	98,	473,	18
1850	328,	85,	413,	16½
'51	317,	82,	399,	16
'52	327,	96,	423,	17
'53	323,	99,	422,	17
'54	567,	180,	747,	30
'55	866,	218,	1,084,	43½
'56	693,	226,	919,	36¾
'57	411,	144,	555,	22
'58	366,	134,	500,	20
'59	607,	208,	815,	32½
1860	444,	203,	647,	26
'61	441,	230,	671,	27
'62	435,	242,	677,	27
'63	461,	221,	682,	27¼

XI.—*Table showing Yearly Expenditure as Certified to by Commissioners for Auditing Public Accounts, on account of Army, Militia, Commissariat, Ordnance, and Navy.*

[000's omitted.]

Year ending 31st March.	Land Forces.	Commissariat.	Ordnance.	Total Army.	Total Navy.	Grand Total, Army and Navy.
	£	£	£	£	£	£
1848	6,622,	882,	2,897,	10,402,	8,060,	18,463,
'49	6,617,	589,	2,976,	10,172,	7,955,	18,127,
1850	6,109,	455,	2,552,	9,618,	6,609,	16,227,
'51	6,088,	528,	2,311,	8,928,	6,185,	15,113,
'52	6,142,	854,	2,318,	9,315,	6,393,	15,708,
'53	6,430,	754,	2,415,	9,601,	6,527,	16,128,
'54	6,285,	617,	2,991,	9,894,	7,196,	17,090,
'55	8,222,	1,487,	5,406,	15,116,	15,017,	30,134,
'56	21,233,	—	11,993,	33,226,	19,590,	52,817,
'57	21,116,	—	—	21,116,	14,664,	35,780,
'58	13,217,	—	—	13,217,	9,962,	23,180,
'59	12,526,	—	—	12,526,	9,293,	21,820,
1860	14,140,	—	—	14,140,	12,761,	26,901,
'61	16,286,	—	—	16,286,	13,122,	29,409,
'62	15,932,	—	—	15,932,	13,542,	29,474,
'63	15,419,	—	—	15,419,	11,829,	27,249,
'64	14,890,	—	—	14,890,	10,746,	25,636,

MISCELLANEA.

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I.—*The Imports of Grain before and after the Repeal of the Corn Laws.*

A paper upon this subject was read before Section F of the British Association in 1864 by the Editor; a breviate of that communication is given below, and a short series of tables upon which the paper was based is appended.

The custom house returns disclose figures which, to those who are not familiar with statistical and economic research, look like fabulous amounts. For example, in the four years ended with 1844 (these were the last years of the celebrated and mischievous "sliding scale"), 1,791,000 quarters was the average yearly quantity of wheat imported; the price of British wheat being in those years 64*s.* 4*d.*, 57*s.* 3*d.*, 50*s.* 1*d.*, and 51*s.* 3*d.*, taking them chronologically. But in the four years ended with 1863, the average imports were 6,970,000 quarters, while our home prices ranged between 44*s.* 9*d.* and 55*s.* 5*d.* The imports in quantity were, in the last mentioned years, nearly *fourfold* what we obtained in 1841-44; at the same time the price was much lower. Under "grain" are classed wheat, wheaten flour and meal, barley, oats, rye, maize, peas and beans, &c., and it appears, with regard to the value of these commodities, that the whole of the imports during the decade ended with 1863 amounted to 250,202,000*l.*; nearly all the vast quantity of grain and flour which this money value represents has been consumed in the United Kingdom, about three million's worth only having been exported in the ten years. The annual average home consumption of foreign corn, flour and meal for 1852-63, was 11,865,000 quarters, valued at 25,000,000*l.* very nearly. Three periods of four years each are taken to show the imports, according to population, of grain and flour of every description.

	Average Annual Quantity per Head.
1842-45	0·8 of a bushel.
'52-55	2·3 bushels.
'60-63	4·4 „

So that the quantity taken with reference to the population was precisely *five and a half times* greater in 1860-63 than it was eighteen years before. The different parts of the United Kingdom appeared to participate equally in the imports of grain properly so called, but Ireland received a much smaller quantity of wheat flour and meal than either England or Scotland, *e.g.*, the following are the proportions in each division of the kingdom for 1861:—

	Grain of all Kinds.	Bushels of Grain per Head.	Flour and Meal of all Kinds.	Pounds of Flour and Meal per Head.
	Qrs.		Cwts.	
England and Wales....	9,978,000	3·9	5,167,000	28·6
Scotland	1,505,000	3·9	802,000	29·3
Ireland	2,740,000	3·9	184,000	3·6

The year of maximum imports was 1862, when 18,441,000 quarters of grain, meal, and flour of all sorts, valued at 37,772,000*l.*, were received into the ports of the United Kingdom. Mr. McCulloch computed that, for human food and for the subsistence of inferior animals, this country required 49,000,000 quarters of grain, flour, and meal annually. This estimate was made five or six years ago; more recently, Mr. Caird has computed the annual quantity of wheat required for the consumption of Great Britain at 18,700,000 quarters.

England yields to other nations but little corn or flour. The average annual value of grain, wheat flour, and meal of every description exported during the ten years ended with 1863, was only 903,800*l.*; *one-third* was foreign produce, and *two-thirds* British. The largest shipments occurred in 1861, namely, 2,223,000*l.*, or ten times the amount, measured pecuniarily, that we sent abroad in the previous year.

To the tables which follow a supplemental statement is added, bringing the statistics down to end of 1865. In September, 1864, the customs commenced keeping the account of the imports of grain by weight and not by measure of capacity as theretofore. The custom house authorities found, from a variety of trials, that an imperial quarter of grain was equivalent to the respective weights stated below, viz.:—

		Cwts.		Pounds Avoirdupois.
1 quarter of	wheat..	4⅓	=	485⅓
1 „	barley..	3 4/7	=	400
1 „	oats	2¾	=	308
1 „	rye	4 1/7	=	464
1 „	beans	4 2/7	=	480
1 „	peas	4½	=	504
1 „	maize, or Indian corn	4 2/7	=	480
1 „	buckwheat................................	3 4/7	=	400

According to the House of Commons' Paper No. 387, Sess. 1864, wheat, meal, and flour were converted from hundredweights into imperial quarters, at the rates of 3½ cwts. per quarter.

The subjoined tables, with the exception of the last, were compiled for the original paper.

A. Shows for each year the quantity of grain and flour imported from 1841 to 1863.

B. Shows the total quantity of flour and grain of every description imported in the same years, and estimated value thereof since 1854.

C. Shows the quantity of wheat imported, and its estimated value for each of the twenty-three years ended with 1863.

D. Shows the average quantity per head of grain and flour imported into the three kingdoms.

E. Shows as a supplemental table the quantity and value of grain and flour imported during the three years ended with 1865.

F. P.

A.—*Quantity and Value, so far as known, of every description of Grain, Flour, and Meal Imported into the United Kingdom during the Twenty-three Years ended with* 1863, *with the Average Price of Corn in the Home Markets.*

[000's omitted.]

Years and Average of Years.	Wheat.		Barley.		Oats.		Rye.	
	Quarters.	Average Price in Home Markets.	Quarters.	Average Price in Home Markets.	Quarters.	Average Price in Home Markets	Quarters.	Average Price in Home Markets.
		s. *d.*		*s.* *d.*		*s.* *d.*		*s.* *d.*
1841	2,409,	64 4	264,	—	122,	—	16,	—
'42	2,717,	57 3	73,	—	301,	—	15,	—
'43	940,	50 1	179,	29 6	84,	18 4	5,	—
'44	1,099,	51 3	1,019,	33 8	300,	20 7	27,	—
'45	872,	50 10	368,	31 8	590,	22 6	—	—
1846	1,433,	54 8	370,	32 8	789,	23 8	2,	—
'47	2,656,	69 6	773,	44 2	1,706,	28 8	69,	—
'48	2,581,	50 6	1,055,	31 6	967,	20 6	63,	—
'49	3,845,	44 3	1,381,	27 9	1,267,	17 6	241,	—
'50	3,739,	40 3	1,036,	23 5	1,154,	16 5	94,	—
Average 1841-50	2,230,	—	652,	—	728,	—	53,	—
1851	3,812,	38 5	832,	24 9	1,199,	18 7	25,	—
'52	3,060,	40 9	626,	28 6	989,	19 1	10,	29 10
'53	4,915,	53 3	825,	33 2	1,028,	21 -	77,	35 -
'54	3,431,	72 5	554,	36 -	1,015,	27 11	6,	45 10
'55	2,668,	74 8	351,	34 9	1,034,	27 5	2,	45 8
1856	4,073,	69 2	732,	41 1	1,147,	25 2	28,	45 -
'57	3,438,	56 4	1,704,	42 1	1,710,	25 -	76,	38 3
'58	4,242,	44 2	1,662,	34 8	1,856,	24 6	104,	32 3
'59	4,001,	43 9	1,728,	33 6	1,678,	23 2	81,	32 4
'60	5,881,	53 3	2,117,	36 7	2,291,	24 5	97,	36 3
Average 1851-60	3,952,	—	1,113,	—	1,394,	—	50,	—
1861	6,913,	55 4	1,401,	36 1	1,860,	23 -	54,	35 9
'62	9,469,	55 5	1,857,	35 1	1,610,	22 7	2,	36 4
'63	5,623,	44 9	2,068,	33 11	2,362,	21 2	22,	32 5
Average 1861-63	7,335,	—	1,775,	—	1,944,	—	26,	—

Note.—During the four or five first years of the table, the "sliding scale" was in force. The duty on wheat was 4*s.* per quarter during 1846-48. In 1849 it was reduced to *one shilling* per quarter.

A.—*Quantity and Value of every description of Grain, Flour, and Meal—Contd.*

[000's omitted.]

Years and Average of Years.	Maize.		Beans.		Peas.		Wheatmeal and Flour.		All other sorts of Meal.
	Quarters.	Average Price in Home Markets.	Quarters.	Average Price in Home Markets.	Quarters.	Average Price in Home Markets.	Cwts.	Average Price according to the Custom-House Returns.	Cwts.
		s. *d.*		*s.* *d.*		*s.* *d.*		*s.* *d.*	
1841	4,	—	294,	—	149,	—	1,263,	—	13,
'42	36,	—	126,	—	93,	—	1,130,	—	21,
'43	1,	—	48,	—	48,	—	437,	—	6,
'44	37,	—	154,	—	108,	—	981,	—	4,
'45	56,	—	185,	—	83,	—	946,	—	3,
1846	706,	—	255,	—	213,	—	3,190,	—	157,
'47	3,608,	—	444,	—	158,	—	6,329,	—	2,305,
'48	1,576,	—	488,	—	216,	—	1,754,	—	276,
'49	2,224,	—	458,	—	234,	—	3,350,	—	162,
'50	1,277,	—	439,	—	180,	—	3,819,	—	19,
Average 1841-50 in qrs.	953,	—	289,	—	148,	—	2,320, or 663, qrs.	—	296, or 90, qrs.
1851	1,808,	—	318,	—	99,	—	5,314,	—	19,
'52	1,471,	—	371,	32 3	106,	30 7	3,865,	—	2,
'53	1,544,	—	350,	40 1	101,	38 6	4,622,	—	17,
'54	1,350,	41 -	386,	47 3	109,	45 7	3,647,	21 6	59,
'55	1,215,	43 9	345,	46 6	113,	43 4	1,904,	24 -	18
1856	1,778,	32 -	353,	43 11	86,	41 7	3,970,	20 -	21,
'57	1,151,	35 4	306,	43 -	160,	41 4	2,178,	17 7	6,
'58	1,751,	31 6	412,	41 11	158,	42 11	3,856,	15 1	10,
'59	1,314,	28 1	344,	42 3	156,	39 8	3,328,	14 -	4,
'60	1,852,	33 3	440,	44 8	314,	40 6	5,086,	16 2	71,
Average 1851-60 in qrs.	1,523,	—	362,	—	140,	—	3,777, or 1,079, qrs.	—	23, or 8, qrs.
1861	3,090,	31 3	561,	42 5	400,	41 2	6,153,	15 5	97,
'62	2,729,	27 9	475,	39 11	228,	40 2	7,207,	14 4	18,
'63	2,972,	26 10	485,	37 5	303,	36 -	5,219,	12 8	12,
Average 1861-63 in qrs.	2,930,	—	507,	—	310,	—	6,193, or 1,770, qrs.	—	42, or 12, qrs.

B.—*Grand Total of Meal, Wheatmeal, and other sorts of Meal and Flour and Grain Imported into the United Kingdom.*

[000's omitted.]

Years and Average of Years.	Total of Flour and all other sorts of Meal. Cwts.	Grand Total of *Grain* and *Flour* Imported. Quarters.	Grand Total of *Grain* and *Flour* Imported. Estimated Value for each Year.
			£
1841	1,276,	3,628,	See note
'42	1,151,	3,697,	—
'43	442,	1,434,	—
'44	985,	3,031,	—
'45	949,	2,430,	—
1846	3,348,	4,752,	—
'47	8,634,	11,916,	—
'48	2,030,	7,528,	—
'49	3,512,	10,670,	—
'50	3,838,	9,020,	—
Average 1841-50	2,616, or 753, qrs.	5,810,	—
1851	5,333,	9,618,	—
'52	3,867,	7,747,	—
'53	4,638,	10,173,	—
'54	3,705,	7,910,	21,760,
'55	1,922,	6,279,	17,509,
1856	3,991,	9,339,	23,039,
'57	2,184,	9,169,	19,381,
'58	3,866,	11,294,	20,153,
'59	3,332,	10,271,	18,042,
'60	5,158,	14,495,	31,672,
Average 1851-60	3,800, or 1,088, qrs.	9,629,	2,1651, (avge. of 7 yrs.)
1861	6,250,	16,095,	34,919,
'62	7,225,	18,442,	37,772,
'63	5,231,	15,353,	25,956,
Average 1861-63	6,235, or 1,782, qrs.	16,630,	32,882,

Note.—There are no official accounts of value before 1854.

C.—*The Quantity of Wheat Imported into the United Kingdom from* 1841 *to* 1863 *inclusive; the Estimated Value thereof, assuming that it was of the same worth as the Wheat Sold in the Home Markets upon which the Government Averages were struck for the Years named.*

Years.	Quarters.	Average Price in Home Markets.		Estimated Value at that Price.
		s.	*d.*	£
1841	2,409,754	64	4	7,751,375
'42	2,717,454	57	3	7,778,712
'43	940,120	50	1	2,354,217
'44	1,099,077	51	3	2,816,385
'45	871,710	50	10	2,215,596
1846	1,432,591	54	8	3,915,749
'47	2,656,455	69	6	9,231,181
'48	2,580,959	50	6	6,516,921
'49	3,845,378	44	3	8,508,695
'50	3,738,995	40	3	7,524,727
Average 1841-50	2,229,249	53	3½	5,940,020
1851	3,812,008	38	5	7,322,232
'52	3,060,268	40	9	6,235,296
'53	4,915,430	53	3	13,087,332
'54	3,431,227	72	5	12,423,901
'55	2,667,702	74	8	9,959,421
1856	4,072,833	69	2	14,085,214
'57	3,437,957	56	4	9,683,579
'58	4,241,719	44	2	9,367,129
'59	4,000,922	43	9	8,752,017
'60	5,880,958	53	3	15,658,051
Average 1851-60	3,952,102	54	7½	10,794,179
1861	6,912,815	55	4	19,125,455
'62	9,469,270	55	5	26,237,769
'63	5,622,501	44	9	12,580,346
Average 1861-63	7,334,586	51	10	19,008,385

D.—*Average Annual Quantity of Grain of all Kinds, and of Flour and Meal of all Kinds Imported into the United Kingdom during the Four Years ended with* 1845; *Four Years ended with* 1855; *and Four Years ended with* 1863.

[000's omitted.]

Years.	Population.	Average Annual Imports in Quarters.	Average Annual Quantity per Head in Quarters.	Average Annual Quantity per Head in Bushels.
1842–45............	26,989,	2,648,	·098	·784
'52–55............	27,746,	8,027,	·290	2·320
'60–63............	29,321,	16,096,	·549	4·392

Note.—The quantities are averaged according to the last table in Mr. Caird's Return, No. 387, "Corn and Grain," Sess. 1864.

E.—*Supplemental Table of the Quantities and Value of Grain and Flour Imported into the United Kingdom in* 1863-64-65.

[000's omitted.]

Years.	Wheat.		Barley.		Oats.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Cwts.	£	Cwts.	£	Cwts.	£
1863................	24,364,	12,015,	7,384,	2,824,	6,496,	2,215,
'64................	23,197,	10,673,	4,921,	1,624,	5,563,	1,828,
'65................	20,963,	9,776,	7,818,	2,525,	7,714,	2,771,

Years.	Maize.		Beans.		Peas.		Wheatmeal and Wheat Flour.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Cwts.	£	Cwts.	£	Cwts.	£	Cwts.	£
1863................	12,787,	4,043,	2,078,	749,	1,362,	517,	5,219,	3,523,
'64................	6,286,	1,978,	909,	345,	1,114,	428,	4,512,	2,832,
'65................	7,096,	2,234,	958,	396,	783,	319,	3,904,	2,627,

Note.—The quantities for 1863 will also be found in Table A, returned in quarters for each sort of grain.

II.—*Cost of Maintenance at the London Orphan Asylum.*

The board of managers of this institution have stated in a recent report the expense of maintaining children at their establishment during the ten years ended with 1865. The following statistics are taken from the report:—

	1856.	1857.	1858.	1859.	1860.
Average number of children	401	409	413	405	406
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Gross expense of the establishment	11,044 18 10	10,024 17 5	10,778 5 9	10,406 15 7	10,896 18 7
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Provisions, fuel, and washing, per head	13 2 5	11 16 8	11 10 2½	11 16 8	11 19 9½
Clothing, per head	4 – 11	3 2 5½	3 16 1	3 18 –	3 2 –
Salaries and wages, per head	4 8 1	4 12 1	4 11 6½	4 15 10	5 3 9
Repairs and all other expenses, per head	4 12 1	3 17 9	4 18 10½	3 18 7	5 6 10
Total maintenance, clothing and education	26 3 6	23 8 11½	24 16 8½	24 9 1	25 12 4½
Additional outfits and rewards after leaving the Asylum	1 7 4	1 1 3	1 5 3	1 4 10	1 5 9
	27 10 10	24 10 2½	26 1 11½	25 13 11	26 18 1½

	1861.	1862.	1863.	1864.	1865.
Average number of children	407	414	432	455	458
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Gross expense of the establishment	11,487 16 11	10,268 11 11	11,160 – 8	11,579 6 9	12,448 15 2
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Provisions, fuel, and washing, per head	12 6 –	10 15 3	10 1 1	10 5 10½	11 13 1
Clothing, per head	3 11 7	3 19 1	3 11 11	3 14 3½	3 14 8
Salaries and wages, per head	5 11 4	5 9 5	6 2 3	5 18 5	6 – 6
Repairs and all other expenses, per head	5 11 6	3 8 8	4 17 5	4 7 6½	4 11 5
Total maintenance, clothing and education	27 – 5	23 12 5	24 12 8	24 6 1½	25 19 8
Additional outfits and rewards after leaving the Asylum	1 4 1	1 3 7	1 4 –	1 2 10½	1 4 –
	28 4 6	24 16 –	25 16 8	25 9 –	27 3 8

The cost per head of certain articles consumed during the same time is shown hereunder :—

Year.	Average Number of Children.	Cost per Head.						
		Bread.	Meat.	Butter and Cheese.	Potatoes.	Milk.	Beer.	Soap.
		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1856	401	92 2	72 5	9 7	2 5½	16 6	9 1	4 8
'57	409	69 11½	69 3	9 4½	4 7	16 5	8 8	4 10
'58	413	57 8½	69 –	10 7	3 4	16 11½	9 4½	3 6½
'59	405	56 10	70 –	11 8½	3 7	16 4½	10 4½	6 9½
'60	405	62 10	63 9	11 10	6 5½	16 2½	9 5½	6 7
1861	407	71 11	60 6½	11 6	4 –	16 6	8 2½	5 2½
'62	414	63 –½	49 11	10 6	3 4	15 6	8 8	6 –
'63	432	57 3	50 10½	11 4	3 10	15 10	7 7½	2
'64	455	51 7	49 11	11 9½	3 8	18 8	7 9½	4 4½
'65	458	50 9½	56 2	11 4½	3 9	24 7	8 –	3 11½

Year.	Average Number of Children.	Cost per Head.				Total.	
		Gas.	Coals and Coke.	Seaside Expenses.	Medicines and various Petty Expenses.	Cost per Head.	Cost for the Entire Establishment.
		s. d.	s. d.	s. d.	s. d.	£ s. d.	£ s. d.
1856	401	2 11	16 4	7 4½	28 10	13 2 5	5,260 10 4
'57	409	3 4	11 2	9 9	29 4	11 16 8	4,839 9 1
'58	413	2 8½	10 6	12 6½	33 11½	11 10 2½	4,754 – 4
'59	406	3 3	10 9	14 10	32 2	11 16 8	4,792 5 4
'60	405	3 11	13 10	10 11	34 –	11 19 9½	4,855 11 3
1861	407	3 9	14 1	13 1½	37 2	12 6 –	5,006 1 6
'62	414	3 10	11 1	10 7	32 9½	10 15 8	4,456 5 1
'63	432	2 2	10 7	4 8	34 5½	10 1 1	4,343 19 7
'64	455	2 11	11 2½	8 6½	35 5	10 5 10½	4,683 14 1
'65	458	3 1½	14 7	4 6½	52 2½	11 13 1	5,337 16 8

III.—*Statistics of the University of Aberdeen.*

To the local statistics of the city of Aberdeen* Mr. Valentine has this year added particulars relative to the University, namely:—

	1861-62.	1862-63.	1863-64.	1864-65.	1865-66.
Attendance—					
Arts	393	375	353	331	323
Medicine	166†	160	149	136	138
Law	12	6	10	6	15
Divinity	69	69	54	54	47‡
	640	610	566	527	523
Deduct students attending two faculties	14	9	6	4	16
	626	601	560	523	507
	1861.	1862.	1863.	1864.	1865.
Summer Sessions—					
Medicine	137	106	83	98	78
Law	16	9	6	11	7
	153	115	89	109	85
Graduates—					
Arts	61§	52	5	42	37
Medicine	39	29	74	52	52‖
Divinity	—	—	—	4	—
Laws	—	—	—	5	5
	100	81	79	103	94

Members of General Council—			
1861	813	1863	359
'62	443	'64	333
		'65	502

† In medicine private students are included throughout.
‡ Up to 22nd January, others ("partial") may yet enter.
§ King's College, 34; Marischal, 27.
‖ M.D., 20; M.B., 32; M.C., 43.

IV.—*The Circulation of Bank Notes in England since the Panic.*

From the *Economist* of the 8th September:—

"Alderman Salomons has obtained a very valuable return of the Bank of England note circulation this year, so as to exhibit the changes which it has undergone in consequence of the great events which have lately occurred. And some of the details are very remarkable.

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* See *Journal*, vol. xxvii, pp. 357, *et seq.*

"First. There was, as we know, an increase of 3,776,000*l.* in a single week. Overends failed on Friday evening, and by the next Friday the active circulation had increased by that large sum. This was known by the ordinary Bank return, but what was not known was the *denomination* of the note in which the issue was made. This the present return gives, and it is as follows:—

Denomination of Note.	May 9.	May 16.	Total Increase.	Percentage of Increase.
	£	£	£	
5*l.*	8,063,000	8,711,000	648,000	8
10*l.*	4,299,000	4,876,000	577,000	13
20*l.* to 100*l.*	6,482,000	8,185,000	1,703,000	26
200*l.* to 500*l.*	1,798,000	2,337,000	539,000	30
1,000*l.*	1,703,000	2,012,080	309,000	18
Notes held by the public	22,345,000	26,121,000	3,776,000	17

"From which it is evident that by far the highest percentage increase is in the notes above 20*l.*, and that 2,500,000*l.*, or, in round numbers, two-thirds of the whole sum were in notes above 20*l.* also. This enables us at once to determine the purpose for which the great demand on the Bank of England was made. The demand for notes above 20*l.*, could not be to supply the place of the country circulation, which consists wholly of 5*l.* notes and 10*l.* notes. A 200*l.* note or a 1,000*l.* note would, in a circulation run, be wholly useless. All large notes—all above 20*l.*—may be assumed to be taken for deposits only. Many of the 5*l.* or 10*l.* notes *may* have been taken out for deposits also, but the higher denominations must have been so.

"The country circulation did not instantaneously fall, but, as will be seen by the annexed return, it very rapidly did so. It fell at the worst period 909,000*l.*, while the Bank of England 5*l.* and 10*l.* note circulation increased, at the worst time, 1,225,000*l.* The main strain of the demand on the Bank was for a reserve —the deposits of other bankers—for notes of high denomination suitable for that purpose, and for it only.

"Secondly. This return shows how nearly broken Sir R. Peel's Act was. The reserve of notes was down to 415,000*l.* for London and all the branches, and therefore it must have been often matter of argument and hypothesis in London whether it was, or was not, broken. Half a million is no extreme extra issue for all the whole of the country branches taken together, and if they had happened to make such an issue about the 15th of May, the Act would have been broken. In fact, the Act *was* broken in spirit, because the Bank directors could not have let their reserve of notes dwindle down to so trivial a sum, unless they knew they could break the law with impunity. The Bank possessed and relied upon an illegal guarantee, though as it chanced it had not occasion to resort to the guarantee.

"Thirdly. The return also shows that before the panic and since February there had been an increase of the bank note circulation of 1,782,000*l.*, which was divided according to denominations thus:—

Denomination of Note.	February 29.	May 9.	Total Increase.	Percentage of Increase.
	£	£	£	
5*l.*	7,889,000	8,068,000	674,000	9
10*l.*	4,005,000	4,299,000	294,000	7
20*l.* to 100*l.*	5,916,000	6,482,000	566,000	9
200*l.* to 500*l.*	1,590,000	1,798,000	208,000	13
1,000*l.*	1,663,000	1,703,000	40,000	2
Notes held by the public....	20,563,000	22,345,000	1,782,000	8

" During this period the country circulation was affected by the relinquishment of the circulation by the Provincial Bank of England of 442,000*l.* This was reduced to 86,000*l.* by the beginning of May; and has been still further reduced since. But this substitution of Bank of England for country circulation, only accounts for a part. Nor are we able to give any real explanation of it. Curiously enough, a similar change occurred in the year 1864—a year which has many analogies with 1866.

		£
24th February, 1864, the active circulation was	....	19,857,000
9th May, '66, "	....	21,484,000

" But we do not say that this correspondance is more than accidental. Nor, though we can account for all that has happened since the failure of Overends, are we able at present satisfactorily to explain the increase before."

Summary of Weekly Returns of English Country Banks of Issue since the Panic.

		Fixed Issues.	May 5.	May 12.	May 19.	May 26.
		£	£	£	£	£
132	Private banks	4,038,240	2,977,668	2,978,972	2,891,717	2,734,531
58	Joint-stock banks	3,218,135	2,590,947	2,589,772	2,523,492	2,411,921
190	Totals	7,256,375	5,568,615	5,568,744	5,415,209	5,146,452

		Fixed Issues.	June 2.	June 9.	June 16.	June 23.
		£	£	£	£	£
132	Private banks	4,038,240	2,695,546	2,617,657	2,552,775	2,504,858
58	Joint-stock banks	3,218,135	2,303,240	2,243,239	2,199,677	2,183,055
190	Totals	7,256,375	4,998,786	4,860,896	4,752,452	4,687,913

		Fixed Issues.	June 30.	July 7.	July 14.	July 21.
		£	£	£	£	£
131	Private banks	4,032,616	2,492,539	2,523,796	2,535,315	2,503,223
58	Joint-stock banks	3,218,135	2,166,530	2,208,809	2,221,690	2,196,996
189	Totals	7,250,751	4,659,069	4,732,605	4,757,005	4,700,219

The following table has been abstracted from the paper referred to above :—

Bank Notes Issued by the Issue Department of the Bank of England in each of the following Weeks.

[000's omitted.]

1866. Week Ending	£5 Notes.	£10 Notes.	£20 to £100 Notes.	£200 to £500 Notes.	£1,000 Notes.
	£	£	£	£	£
Feb. 21	7,389,	4,005,	5,916,	1,590,	1,663,
„ 28	7,354,	3,992,	6,090,	1,705,	1,627,
March 7	7,363,	3,995,	6,064,	1,649,	1,664,
„ 14	7,296,	3,975,	5,955,	1,597,	1,700,
„ 21	7,299,	3,984,	6,014,	1,631,	1,708,
„ 28	7,594,	4,166,	6,328,	1,753,	1,781,
April 4	7,913,	4,271,	6,548,	1,915,	1,686,
„ 11	7,989,	4,262,	6,435,	1,634,	1,725,
„ 18	8,052,	4,307,	6,424,	1,779,	1,742,
„ 25	8,037,	4,291,	6,439,	1,740,	1,654,
May 2	8,115,	4,332,	6,760,	1,954,	1,712,
„ 9	8,063,	4,299,	6,482,	1,798,	1,703,
„ 16	8,711,	4,876,	8,185,	2,337,	2,012,
„ 23	8,610,	4,764,	7,825,	2,248,	2,022,
„ 30	8,520,	4,829,	8,154,	2,393,	2,123,
June 6	8,548,	4,718,	7,902,	2,256,	2,029,
„ 13	8,576,	4,860,	8,156,	2,276,	2,098,
„ 20	8,427,	4,803,	7,899,	2,103,	1,875,
„ 27	8,445,	4,769,	7,726,	2,006,	1,878,
July 4	8,752,	4,877,	7,995,	2,180,	2,008,
„ 11	8,770,	4,851,	7,674,	1,968,	1,930,
„ 18	8,822,	4,894,	7,675,	1,944,	2,086,
„ 25	8,787,	4,883,	7,687,	2,002,	1,904,

1866. Week Ending.	Notes held by the Public.	Notes held by the Bank.	Total Issue.	Securities.	Bullion.
	£	£	£	£	£
Feb. 21	20,563,	7,409,	27,972,	15,000,	12,972,
„ 28	20,768,	7,345,	28,113,	—	13,113,
March 7	20,735,	7,416,	28,151,	—	13,151,
„ 14	20,523,	7,905,	28,428,	—	13,428,
„ 21	20,636,	7,918,	28,554,	—	13,554,
„ 28	21,622,	6,881,	28,503,	—	13,503,
April 4	22,333,	6,153,	28,486,	—	13,486,
„ 11	22,045,	6,318,	28,363,	—	13,363,
„ 18	22,304,	5,738,	28,042,	—	13,042,
„ 25	22,161,	5,844,	28,005,	—	13,005,
May 2	22,873,	4,839,	27,712,	—	12,712,
„ 9	22,345,	4,950,	27,295,	—	12,395,
„ 16	26,121,	731,	26,852,	—	11,852,
„ 23	25,469,	831,	26,300,	—	11,300,
„ 30	26,019,	415,	26,434,	—	11,434,
June 6	25,453,	2,167,	27,620,	—	12,620,
„ 13	25,966,	2,730,	28,696,	—	13,696,
„ 20	25,107,	4,067,	29,174,	—	14,174,
„ 27	24,824,	4,347,	29,171,	—	14,171,
July 4	25,812,	3,336,	29,148,	—	14,148,
„ 11	25,193,	3,095,	28,288,	—	13,288,
„ 18	25,421,	2,499,	27,920,	—	12,920,
„ 25	25,263,	2,630,	27,893,	—	12,893,

V.—*Consumption of Wine in the United Kingdom.*

The following statistics are taken from a letter which appeared in the *Times* city article. The writer, Mr. T. G. Shaw, observes that—

> "After five years' experience of the operation of the reduced duties on wine, the following tabular statements may prove interesting, for they exhibit the result by comparison with a considerable period of the former high rates. In analysing the figures, it should not be forgotten that there has been an increase of more than a million of population and an immense augmentation of wealth since 1861, and that more wine would consequently have been drunk even had there been no reduction. The total annual increase has been from about 7,000,000 to 13,000,000 gallons, giving each person yearly about 2¾ bottles, instead of, as formerly, 1½ bottle.
>
> "The revenue is gradually working up to the old average of about 1,900,000*l.*, but it is still more than half a million below that sum." * * *

Table I.—*Showing the Consumption* (*Quantity on which Duty was Paid*) *of the various kinds of Wine from the Year* 1856 *to the* 30*th of June*, 1866. *The Rate of Duty per Gallon was* 5*s.* 9*d. from the Year* 1856 *to* 1859, *and* 3*s. in* 1860. *It is now* 1*s. on all under* 26 *Degrees of Strength, and* 2*s.* 6*d. when stronger. During the last Five Years there have been* 1*s.*, 1*s.* 9*d.*, 2*s.* 5*d.*, 2*s.* 6*d.*, *and* 2*s.* 11*d.*, *besides the Extra Rate when above* 42 *Degrees of Strength. Cape and Australian were* 2*s.* 11*d.*, *until the General Reduction in* 1861.

Average of Years.	Spanish.		Portuguese.		French.		Colonial.		Sicily and Italy.	
	Gallons.	Per Cent.	Gallons.	Per Cent.	Gallons.	Per Cent.	Gallons.	Per Cent.	Gallons.	Per Cent.
1856 to '59....	2,783,831	39·58	2,201,305	30·09	600,932	8·85	582,041	8·25	242,149	3·40
'60....	2,975,769	40·44	1,776,138	24·14	1,125,559	15·30	427,698	5·81	209,154	2·84
1861....	4,031,796	37·38	2,702,707	25·06	2,229,028	20·65	340,096	3·16	227,266	2·13
'62....	3,955,424	40·35	2,350,437	23·97	1,901,200	19·38	18,275	1·86	215,503	2·18
'63....	4,531,424	43·24	2,618,680	24·99	1,939,555	18·51	116,500	1·11	276,280	2·63
'64....	4,974,112	43·41	2,832,217	24·72	2,304,242	20·11	76,983	0·67	372,218	3·25
'65....	5,193,140	43·05	2,890,349	23·96	2,609,639	21·64	68,841	0·57	375,470	3·11
1866*	5,386,214	41·87	2,974,006	22·29	3,234,534	24·24	61,636	0·46	416,683	3·12

Average of Years.	Rhenish and Holland.		Madeira.		Canaries.		Other Countries.		Hamburg.		Total.
	Gallons.	Per Cent.	Gallons.	Per Cent.	Gallons.	Per Cent.	Gallons.	Per Cent.	Gallons.	Per Cent.	
1856 to '59....	99,315	1·39	34,972	0·49	4,852	·07	—	—	—	—	7,092,046
'60....	222,725	3·03	28,942	0·39	4,015	·05	—	—	—	—	7,358,198
1861....	345,652	3·20	28,814	0·27	3,756	·04	—	—	—	—	10,787,091
'62....	316,173	3·22	28,550	0·32	3,505	·04	—	—	—	—	9,803,038
'63....	321,485	3·06	29,671	0·29	2,849	·03	—	—	—	—	10,478,401
'64....	371,346	3·24	24,187	0·21	—	—	240,479	2·12	260,931	2·27	11,456,715
'65....	405,179	3·37	20,848	0·16	—	—	236,411	1·97	262,000	2·17	12,061,886
1866*	510,440	3·82	19,944	0·14	—	—	250,630	1·88	287,386	2·15	13,141,428

* If the last six months are the same as the first.

TABLE II.—*The Consumption of Wine, the Revenue from it, the Population, the Rates of Duty per Gallon, and the Number of Bottles for each Person per Annum, calculated on Average Periods from the Year* 1851 *to the* 30*th June*, 1866.

Average of Years.	Gallons.	Revenue.	Rates of Duty.		Population.	Bottles for each Person.
			Colonial.	All other Kinds.		
1851 to		£				
'58	6,748,975	1,907,627	2*s.* 11*d.*	5*s.* 9*d.*	28,415,935	1·4
'59	7,263,046	1,982,327	2*s.* 11*d.*	5*s.* 9*d.*	28,564,817	1·5
'60	7,358,192	1,144,794	3*s.*	3*s.*	28,796,408	1·5
1861	10,787,091	1,219,533	1*s.*, 1*s.* 9*d.* 2*s.* 5*d.*, 2*s.* 11*d.*	1*s.*, 1*s.* 9*d.* 2*s.*, 2*s.* 11*d.*	28,980,575	2·2
'62	9,803,028	1,123,603	1*s.*, 2*s.* 6*d.*	1*s.*, 2*s.* 6*d.*	29,214,574	2·0
'63	10,478,401	1,214,762	—	—	29,441,757	2·1
'64 ...	11,456,715	1,319,261	—	—	29,674,320	2·3
'65 ...	12,061,386	1,374,854	—	—	29,865,268	2·4
1866*	13,341,422	1,400,854	—	—	29,935,404	2·7

* If the last six months are the same as the first.

The Paris correspondent of the *Times* has recently stated some facts relative to the wine trade of France, which may be usefully considered in connection with Mr. Shaw's tables. The subjoined passage appeared in that journal on the 13th September instant:—

> "Some interesting statistics and remarks relating to the consumption of French wines in England appear in the last number of the *Moniteur Industriel.* It seems that we are by no means such important customers to our nearest wine-growing neighbours as might be supposed, and that for much the greater part of our foreign drinks we go farther and (a Frenchman at least would say so) fare worse. The average quantity of wine produced in France is 38 millions of hectolitres (22 imperial gallons), which are distributed as follows:—15,254,000 consumed by the growers or sold directly to consumers, 2,454,000 converted into spirits, 220,000 go to make vinegar, 2,336,000 are exported, 13,340,000 are taken by the wine trade, and 4,396,000 remain disposable. In the seven years of 1857 to 1863 the annual average of wine taken by England from Spain was 220,978 hectolitres; from Portugal, 136,000; Germany, 83,077; France, 74,400. Many persons will be surprised to find that we have been in the habit of taking more wine from Germany than from France, though the German wines doubtless include Hungarian wines, and perhaps wines of other countries exported from bonded depôts in the North German ports. In 1864, however, the English market took 167,382 hectolitres, worth 23,748,465 frs., or little short of a million sterling, and the increase has continued, 82,392 hectolitres having gone to England during the first six months of 1866, against 64,976 and 60,301 in the corresponding periods of 1865 and 1864. As regards the great majority of the English people, the love and cheapness of beer will always keep them from the consumption of French wines, which must always be comparatively dear. In fact, compared with other European nations, we hardly drink any wine in England. The statistics of some of the principal countries are given as follows. In France and Portugal the consumption is 100 litres (about equal to imperial quarts) per head of the population, in Austria 57, in Switzerland 56, in Spain 33, in England 1·013. So that we are clearly not a wine-drinking people. It might be very possible, however, to increase the consumption of French

wines in England, at the expense of the wines of other countries, if judgment were exercised in the selection of the qualities and in reducing the expenses and the enormous profits which the English consumer now pays. In the opinion of the *Moniteur Industriel* red wines of intermediate quality, pure, highly coloured, and with plenty of body are the most successful in England. The consumption of French white wines is comparatively small: in 1861-62-63 it was as 94 to 224 of red, and the bulk of the white was probably champagne. Besides this, we learn that among the white French wines imported into England are included imitations of sherry and Madeira, proceeding from Cette and Marseilles, where the 'real nutty flavour' is skilfully imparted by chemical compounds. The writer in the *Moniteur* considers this branch of commerce analagous to that of the champagne made on the Rhine and sold as French, but the parallel is hardly fair, since the sparkling Moselle and Rhine wines and Swiss champagne are natural wines, very different from the Cette compounds, and often in all but name, very little inferior to a great deal of French champagne. Probably, Picardan finds a certain sale in England, to be doctored into sherry. Of the excellent white wines of Bordeaux and Burgundy the consumption in England can hardly be large, and most of them, except in warm weather, would probably be found too cold and thin for the climate, and the British palate accustomed to much stronger potations. The wines of Southern France are recommended as well suited to England, slightly brandied, and sent as much as possible by sea, in order to save them from the pernicious effect the peculiar jogging motion of the railway has upon them. While giving the French exporter some advice as to the manner of arranging his shipments—to send all his wine in bottles, with a good proportion of pints, especially of champagne and the finer wines, &c.—the writer lets us into some of the tricks of the trade,—

" 'Certain exporters instead of using the ordinary Bordeaux and Burgundy bottles have some made on purpose for exportation, smaller or of thicker glass, with bulbs at the bottom which diminish the contents by 10 or 20 per cent. The best pattern to adopt would be the champagne bottle, holding four-fifths of a litre, never less. It is the same with casks. The Côte d'Or barrel, which ought to hold 228 litres, often holds only 214, the Medoc cask, nominally 220, holds but 210, &c. It is important to our wine trade that in these shipments scrupulous regard should be paid to the quantity as well as to quality.'

"The writer does not understand why shipments of French wines should be almost exclusively to London and Liverpool, and not to other provincial ports, since in many counties far from those two cities these wines are largely consumed in the hotels and taverns, which incur additional charges by this arrangement. He says:—

" 'Finally, it would be desirable that the trade in our wines should be carried on in England by French houses there established, so as to avoid their passing through so many intermediate hands before reaching the consumer.' "

MARRIAGES, BIRTHS, AND DEATHS IN THE UNITED KINGDOM.

No. I.—ENGLAND AND WALES.

MARRIAGES IN THE QUARTER ENDED 31ST MARCH, 1866, AND BIRTHS AND DEATHS IN THE QUARTER ENDED 30TH JUNE, 1866.

The *Registers* of the UNITED KINGDOM show that 110,484 persons *married* in the quarter that ended in *March* last; that the *births* of 261,302 children, and the *deaths* of 172,013 persons of both sexes, were registered in the three months ending on *June* 30th.

The death-rate of the United Kingdom is slightly below that which prevailed in England and Wales. The several facts concerning the other divisions of the Kingdom are fully set forth in the quarterly reports of the Registrars General of Scotland and Ireland.

The estimated population at home of England, Scotland, and Ireland, is 29,935,404. The corrected death-rate of the quarter is 2·388 per cent.

England.—This Return comprises the BIRTHS and DEATHS registered by 2,200 registrars in all the districts of England during the spring quarter that ended on June 30th, 1866; and the MARRIAGES in 12,856 churches or chapels, about 5,404 registered places of worship unconnected with the Established Church, and 641 Superintendent Registrars' offices, in the quarter that ended on March 31st, 1866.

ENGLAND:—MARRIAGES, BIRTHS, *and* DEATHS, *returned in the Years* 1860-66, *and in the* QUARTERS *of those Years.*

Calendar YEARS, 1860-66:—*Numbers.*

Years	'66.	'65.	'64.	'63.	'62.	'61.	'60.
Marriages No.	—	185,520	180,387	173,510	164,030	163,706	170,156
Births........ ,,	—	747,870	740,275	727,417	712,684	696,406	684,048
Deaths........ ,,	—	491,360	495,531	473,837	436,566	435,114	422,721

QUARTERS *of each Calendar Year,* 1860-66.

(I.) MARRIAGES:—*Numbers.*

Qrs. ended last day of	'66.	'65.	'64.	'63.	'62.	'61.	'60.
March ....No.	37,576	36,835	37,988	35,528	33,953	33,274	35,150
June .... ,,	—	45,772	44,599	44,146	40,853	42,012	43,777
Septmbr..... ,,	—	45,863	44,675	41,932	40,600	39,884	40,541
Decmbr. .... ,,	—	57,050	53,125	51,904	48,624	48,536	50,688

QUARTERS *of each Calendar Year,* 1860–66.

(II.) BIRTHS:—*Numbers.*

Qrs. ended last day of	'66.	'65.	'64.	'63.	'62.	'61.	'60.
March ....No.	196,737	194,287	192,947	186,341	181,990	172,933	183,188
June .... ,,	192,459	192,921	188,835	189,340	185,554	184,820	174,028
Septmbr. ..... ,,	—	184,642	181,015	173,439	172,709	172,033	164,121
Decmbr. .... ,,	—	179,020	177,478	178,297	172,431	166,620	162,719

(III.) DEATHS:—*Numbers.*

Qrs. ended last day of	'66.	'65.	'64.	'63.	'62.	'61.	'60.
March ....No.	138,233	140,646	142,977	128,096	122,019	121,215	122,617
June .... ,,	123,692	116,006	116,880	118,121	107,392	107,558	110,869
Septmbr. ..... ,,	—	113,404	112,223	112,504	92,381	101,232	86,312
Decmbr. .... ,,	—	121,304	123,451	115,116	114,774	105,109	102,923

The marriage-rate, which was low in 1861-62, but revived subsequently, and was remarkably high in 1865, continued to be well maintained in the first quarter of the present year. The birth-rate was also very high in that quarter, and, though it declined afterwards, it was still a little above the average in the three months that ended on June 30th. But a decidedly unfavourable feature of the present return is the high death-rate that prevailed in the spring quarter. The mortality was much higher than it had been in any June quarter of the ten years 1856-65. The coldness of the season, and epidemics of measles and whooping-cough, appear to have exercised a very wide and fatal influence on the public health.

MARRIAGES.—In the March quarter 75,152 persons were married in England. The marriages were 37,576 against 33,427 in the same quarter of 1856. The number of marriages advances with the increase of population, but not without fluctuations that are attendant on the changing condition of the people, of which condition industrial success or adversity is perhaps the most appreciable, but not the only, element. At the beginning of the last decade the annual number of marriages was about 160,000; at the end of it the number returned in a year was more than 185,000.

The annual marriage-rate in the first quarter of the present year was 1·412 (viz. of persons married) to a hundred persons living. The average rate of ten March quarters was 1·398.

BIRTHS.—The number of children born in the spring quarter (ended 30th June) was 192,459 against 173,263 in the same period of 1856. The annual birth-rate of the quarter was 3·644 per cent. of the population, the average of ten previous springs being 3·620.

The births returned in thirteen weeks ending 30th June numbered 26,776 in London, 1,429 in the city of Bristol, 3,236 in the borough of Birmingham, 4,802 in that of Liverpool, 2,591 in that of Leeds, 3,353 in the city of Manchester. There were 4,893 in Glasgow, a number which slightly exceeds that of Liverpool, though the population of the latter town is greater.

Taking twelve large towns in Great Britain it appears that the birth-rate was highest in Leeds, in which town it was 4·557 per cent.; the next highest was 4·543 in Glasgow; in Newcastle-on-Tyne it was 4·205; in Sheffield 4·009; in Liverpool 3·979. In London and Bristol it was as low as 3·50. But the population of Leeds, there is reason to believe, has been under estimated.

ENGLAND:—*Annual Rates per Cent. of* PERSONS MARRIED, BIRTHS, *and* DEATHS, *during the* YEARS 1860-66, *and the* QUARTERS *of those Years.*

Calendar YEARS, 1860-66:—*General Percentage Results.*

YEARS	'66.	Mean '56-'65.	'65.	'64.	'63.	'62.	'61.	'60.
Estmtd. Popln. of England *in thousands* in middle of each Year....	21,210	—	20,991	20,772	20,554	20,336	20,119	19,903
Persons Married Per ct.	—	1·678	1·768	1·736	1·688	1·614	1·628	1·710
Births .... ,,	—	3·483	3·563	3·561	3·539	3·504	3·461	3·437
Deaths.... ,,	—	2·224	2·341	2·385	2·305	2·147	2·163	2·124

QUARTERS *of each Calendar Year*, 1860-66.

(I.) PERSONS MARRIED:—*Percentages.*

Qrs. ended last day of	'66.	Mean '56-'65.	'65.	'64.	'63.	'62.	'61.	'60.
March....Per ct.	1·442	1·398	1·428	1·472	1·408	1·360	1·346	1·422
June........ ,,	—	1·698	1·752	1·724	1·726	1·614	1·678	1·766
Septmbr. ,,	—	1·621	1·732	1·704	1·616	1·582	1·570	1·614
Decmbr. ,,	—	1·981	2·148	2·022	1·996	1·890	1·906	2·012

(II.) BIRTHS:—*Percentages.*

Qrs. ended last day of	'66.	Mean '56-'65.	'65.	'64.	'63.	'62.	'61.	'60.
March....Per ct.	3·776	3·644	3·768	3·740	3·691	3·644	3·500	3·707
June .... ,,	3·644	3·620	3·691	3·651	3·700	3·665	3·690	3·512
Septmbr. ,,	—	3·343	3·429	3·453	3·343	3·365	3·388	3·267
Decmbr. ,,	—	3·322	3·370	3·376	3·428	3·350	3·272	3·230

(III.) DEATHS:—*Percentages.*

Qrs. ended last day of	'66.	Mean '56-'65.	'65.	'64.	'63.	'62.	'61.	'60.
March....Per ct.	2·653	2·504	2·728	2·772	2·538	2·443	2·453	2·481
June........ ,,	2·437	2·186	2·220	2·260	2·308	2·121	2·147	2·237
Septmbr. ,,	—	2·002	2·141	2·141	2·169	1·800	1·994	1·718
Decmbr. ,,	—	2·205	2·284	2·349	2·213	2·230	2·064	2·043

INCREASE OF POPULATION.—Whilst the births were 192,459, the deaths were 128,692. The natural increase of population was, therefore, 63,767. The movements of the population modify this result.

The total number of emigrants from ports in the United Kingdom, in the three months ended 30th June, was 80,303,* of whom about 19,000 were of English origin; while the Scotch were nearly 5,000, and the Irish 45,000. About 65,000 were destined to the United States, a number which exceeds the emigration to the same part in any June quarter in the last twelve years, with the exception of 1864.

PRICES, PAUPERISM, AND THE WEATHER.—The price of wheat continues to rise; it was 46*s.* 6*d.* per quarter in the three months ending 30th June. Omitting the odd pence, the average prices of the six quarters subsequent to 1st January, 1865, have been successively 38*s.*, 40*s.*, 43*s.*, 44*s.*, 45*s.*, and 46*s.* The mean of the highest and lowest prices of beef at Leadenhall and Newgate Markets was 5⅞*d.* per lb. last spring quarter. In the same period of 1864 it was 5½*d*; and in that of 1865, 5¾*d.* The mean price of mutton was 7*d.* against 6⅛*d.* and 7⅜*d.* in the spring quarter of the two previous years. Best potatoes at the Waterside Market,

CONSOLS, PROVISIONS, PAUPERISM, *and* TEMPERATURE, *in each of the Nine* QUARTERS *ended 30th June*, 1866.

1	2	3	4	5	6	7	8	9
Quarters ending	Average Price of Consols (for Money).	Average Price of Wheat per Quarter in England and Wales.	Average Prices of Meat per lb. at Leadenhall and Newgate Markets (by the Carcase), with the *Mean* Prices.		Average Prices of Potatoes (York Regents) per Ton at Waterside Market, Southwark.	Pauperism. Quarterly Average of the Number of Paupers relieved on the *last day* of each week.		Mean Temperature.
			Beef.	Mutton.		In-door.	Out-door.	
	£	*s.* *d.*	*d.* *d.* *d.*	*d.* *d.* *d.*	*s.* *s.* *s.*			°
1864 30 June	91⅛	39 7	4¼—6¼ 5¼	5¼—7 6⅛	40—60 50	122,717	785,825	53·1
30 Sept.	89⅛	42 3	4½—6½ 5½	5½—7 6¼	80—120 100	115,698	739,341	59·4
31 Dec.	89⅝	38 5	4½—7 5¾	5¼—7¼ 6¼	80—95 87	128,322	771,879	43·7
1865 31 Mar.	89⅜	38 4	4½—7 5¾	5¼—7¼ 6¼	85—97 91	142,329	813,371	36·5
30 June	90⅜	40 6	4¾—6¾ 5¾	6¼—8½ 7⅜	90—115 102	125,846	776,016	56·2
30 Sept.	89⅜	43 3	4½—7 5¾	6¼—8¾ 7½	65—100 85	117,172	719,589	62·5
31 Dec.	88⅛	44 10	4¼—7 5⅝	5½—8¼ 6⅞	60—90 75	129,036	725,259	46·0
1866 31 Mar.	87	45 6	4½—6¾ 5⅝	5½—7¾ 6⅝	55—90 72	139,546	759,402	41·2
30 June	86⅛	46 6	4¾—7 5⅞	5½—8½ 7	60—95 77	123,657	734,139	53·0

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* Return with which the Registrar-General has been favoured by the Emigration Commissioners: of 80,303 emigrants the origin was undistinguished in 2,068 cases, which have been distributed by calculation.

Southwark, were 77*s.* 6*d.* per ton. The average number of paupers in the quarter were: relieved in-door 123,657; relieved out-door 734,139. In-door paupers were nearly equal as regards number to those of corresponding periods in the last two years. Out-door relief exhibits a decrease.

Mr. Glaisher writes:—"At the beginning of the quarter the weather was cold, the temperature being below the average to the mean amount of 2°·4 during the first nine days. The nights were also very cold, the thermometer frequently registering below freezing point, and rain fell copiously throughout the first two weeks. On the 10th of April a sudden change to heat set in, continuing till the 28th day, during which time the weather was unusually fine, and very hot for the season, and but little rain descended. This sudden drying weather caused large tracts of land in all parts of the country to be in such a heavy state that spring operations, particularly sowing, were much impeded, and in fact agricultural operations generally were in a backward state. The budding of trees was in general late, but at places where they had not already shot forth their leaves, the effect of this weather was extraordinary, the leaves appearing and fruit trees blossoming so suddenly, that the whole aspect was changed in a few hours. On the 29th of April a cold ungenial period set in, continuing through May to the 1st of June, with only an occasional day of somewhat warmer character. The mean daily deficiency of temperature during this time amounted to 3°·1, and at night the thermometer frequently fell to below 32°."

"On June 2nd, the weather again changed, and became much warmer, and a mean daily excess over the average temperature occurred to the amount of 4°·2, till the 11th day. A cold period followed, but on the 21st day the temperature again increased considerably, and fine weather followed till the end of the quarter, the mean daily excess of temperature amounting to nearly 5°."

The mean temperature of the air in the quarter was 53°, which is near the average. The rainfall was 7·9 inches, which is also near the average at Greenwich; at Carlisle it was 3·6, Truro 9·7 inches.

Average Annual Rate of Mortality to 1,000 *of the Population in the Eleven Divisions of England in the Ten Years* 1851-60; *in the Year* 1865; *in the Spring, Summer, and Autumn Quarters of* 1865; *and in the Winter and Spring Quarters of* 1866.

Divisions.	Average Annual Rate of Mortality to 1,000 Living in						
	Ten Years, 1851-60.	1865.				1866.	
		Year.	Spring Quarter.	Summer Quarter.	Autumn Quarter.	Winter Quarter.	Spring Quarter.
I. London	23·63	24·40	23·16	21·91	24·05	26·66	25·29
II. South-Eastern counties	19·55	20·40	18·82	19·07	19·44	21·85	19·81
III. South Midland „	20·44	21·56	20·02	20·02	20·79	22·85	21·03
IV. Eastern counties	20·58	21·06	20·40	19·75	19·60	23·19	21·61
V. South-Western counties	20·01	20·42	20·58	17·14	18·81	23·85	21·86
VI. West Midland „	22·35	22·18	20·28	19·46	21·89	26·54	24·16
VII. North Midland „	21·10	21·81	20·52	20·43	20·55	24·01	22·58
VIII. North-Western „	25·51	27·38	24·69	25·64	28·93	33·84	28·74
IX. Yorkshire	23·09	25·71	24·83	25·13	24·86	29·60	27·59
X. Northern counties	21·99	23·70	22·63	22·86	23·03	24·43	22·95
XI. Monmouthshire and Wales	21·28	23·36	24·75	18·74	20·41	23·92	22·45

DEATHS; AND THE STATE OF THE PUBLIC HEALTH.—The deaths in the quarter that ended on June 30th exceed the average of the season. Their number is 128,692, and the mortality, after taking increase of population into account, exceeds the customary rate; for instead of 22 the mortality was at the rate of more than 24 in 1,000. The spring quarter is usually not only healthier than the quarter of winter or autumn, but healthier than the whole round of the year; but 24 is 2 in excess of the average of the last ten years.

The country districts, containing about 9,279,270 people, died at the rate of 22 in 1,000, in the last spring quarter; a rate exceeding the average (20) of those districts by 2. The town districts, of about 11,903,049 inhabitants, suffered still more, for in them the rate was over 26 in 1,000, whereas their average is 23. The increase of the town rate is not only greater absolutely, but greater relatively than the increase of the mortality of the country rate.

Taking the thirteen great cities, as they may be called with regard to their magnitude and standing in the United Kingdom, the mortality, we find, was at the rate of 28 in 1,000; in Birmingham, Hull, London, and Bristol 25, in Dublin 26, in Edinburgh 27, Newcastle-on-Tyne 29, Manchester and Salford 30, Sheffield 31, Glasgow 33, Leeds 34, Liverpool 38. In Liverpool the deaths nearly equal the births in number.

When we find that, exposed to nearly the same temperature and not very dissimilar atmospheric conditions, the mortality of the healthy districts, which have been so often cited in the reports was 20, it is difficult to come to any other conclusion than that there is still something radically wrong in the sanitary administration of the towns of the kingdom. The root of the evil has not been reached. Vast numbers of the population, increasing every year, are blighted by causes which science has discovered, and which hygienic regulations might control. Condensation has an extraordinary tendency to impair the health of the people, and should be met by extraordinary measures.

London is one of the eleven great divisions of the kingdom, and has suffered to about the average extent. The mortality, which was 23 in the previous spring quarter, rose to 25. Not only small-pox, measles, and whooping-cough, but bronchitis and pneumonia grew more fatal. It is to be regretted that the Vaccination Act, which was originally ill-conceived, works badly. The measure requires amendment; and the useless impracticable registration clauses should be struck out. The deaths in London from diarrhœa were 289, from cholera 24; and a few of the cases of cholera were of an epidemic type; but the deaths both from cholera and diarrhœa were much below the average. In the corresponding quarter of the previous year 706 deaths from diarrhœa, 32 from cholera, were registered.

The south-eastern division comprising Kent, Surrey, Sussex, Hants, and Berks, experienced only a slight increase of mortality. The rate of the spring quarter was 20; in the previous spring it was 19. Measles and whooping-cough were fatal at Kingston in Surrey; Worthing in Sussex. The deaths in the latter district were 118 against 65 in the corresponding quarter of the previous year. At Alverstoke one case, Southampton 3 cases, of choleraic diarrhœa or infantile cholera are recorded. Measles has been very fatal in Southampton, where the deaths from all causes were 262.

The mortality in the south midland counties was at the rate of 21; that is one above the spring rate of 1865. Measles and whooping-cough were epidemic in some districts.

The eastern counties suffered from the same epidemics; and the mortality was at the rate of 22. One death from summer cholera was noticed at Cromer, and one from typhus.

The south-western counties, usually among the healthiest, were also visited by measles and whooping-cough; the mortality was at the rate of 22, one higher than the previous spring rate. Small-pox prevailed fatally, and showed how much vaccination had been neglected by the people of Plymouth.

In proceeding to the west midland counties we enter a region where the mortality rose to 24, no less than 4 above the previous spring rate. Measles and whooping-cough, prevailed excessively; the registrars notice one death from cholera in Madeley, 2 in Wolverhampton, one in Sedgley (Dudley).

In the north midland counties the mortality at the rate of 23 was also above the average, owing apparently to the same causes. At Mansfield (Nottinghamshire) the deaths have been much above the average. The whole sewage of the town is poured into a rivulet, from which the water is diverted to work a water-wheel. Scarlatina was fatal in Bakewell, and 2 deaths are noted at Long Sutton (Holbeach).

ANNUAL RATE *of* MORTALITY *per Cent. in* TOWN *and* COUNTRY DISTRICTS *of* ENGLAND *in each Quarter of the Years* 1866-64.

	Area in Statute Acres.	Population Enumerated. 1861.	Quarters ending	Annual Rate of Mortality per Cent. in each Quarter of the Years 1866.	Mean '56-65.	1865.	1864.
In 142 Districts, and 56 Sub-districts, comprising the *Chief Towns*........	3,287,151	10,930,841	March ..	2·967	2·680	2·881	2·980
			June	2·641	2·322	2·339	2·412
			Sept.	—	2·237	2·387	2·386
			Dec. ...	—	2·460	2·564	2·615
			Year	—	2·425	2·543	2·598
In the remaining Districts and Sub-districts of England and Wales, comprising chiefly *Small Towns* and *Country Parishes*	34,037,732	9,135,383	Year	—	1·989	2·080	2·107
			March ..	2·252	2·295	2·514	2·512
			June	2·170	2·024	2·049	2·070
			Sept.	—	1·736	1·828	1·833
			Dec.	—	1·901	1·927	2·014

Note.—The three months, January, February, March, contain 90, in leap year 91 days; the three months, April, May, June, 91 days; each of the last two quarters of the year 92 days. For this inequality a correction has been made in the calculations, also for the difference between 365 and 365·25 days, and 366 and 365·25 days in leap year.

The north-western division, comprising Cheshire and Lancashire, sustains its unhappy pre-eminence; the mortality was at the rate of 29, against 25 in the previous spring quarter. Typhus, scarlatina, measles, whooping-cough, and diarrhœa were fatal in several towns, at the head of which Liverpool stands. Ten deaths of Germans from epidemic cholera occurred in the emigrant depôt at Birkenhead. The Registrar of Preston conceives that the resumption of work in the cotton mills, and greater "indulgence in the use of intoxicating liquors," have contributed to the increase of deaths.

Yorkshire has grown more prosperous but less healthy than it was; the mortality was as high as 28. Leeds has suffered severely from fever. One death from cholera is noted at Pudsey (Bradford); 2 deaths of a mother and child were registered at Goole. They were attacked on the voyage from Antwerp. The steamers from Holland and Belgium should be under strict hygienic control; they have no doubt often been the channel for conveying epidemic disease to England. Passengers and cattle were at one time strangely huddled on these vessels.

The mortality in the northern counties was at the rate of 24; or one over the previous spring rate. Measles and whooping-cough killed 40 children in Berwick; they have thus reigned epidemically from south to north.

Wales has not escaped; the mortality was 24; somewhat less than it was last year. Newport and Swansea demand especial care.

ENGLAND: — MARRIAGES *Registered in Quarters ended* 31*st March*, 1866-64; *and* BIRTHS *and* DEATHS *in Quarters ended* 30*th June*, 1866-64.

1 DIVISIONS. (England and Wales.)	2 AREA in Statute Acres.	3 POPULATION, 1861. (*Persons.*)	4 MARRIAGES in Quarters ended 31st March. '66.	5 '65.	6 '64.
ENGLD. & WALES.... *Totals*	37,324,883	No. 20,066,224	No. 37,576	No. 36,835	No. 37,988
I. London	77,997	2,803,989	6,685	6,380	6,562
II. South-Eastern	4,065,935	1,847,661	2,851	2,771	2,811
III. South-Midland	3,201,290	1,295,515	1,509	1,656	1,671
IV. Eastern	3,214,099	1,142,562	1,489	1,479	1,564
V. South-Western	4,993,660	1,835,714	2,992	3,067	3,147
VI. West Midland	3,865,332	2,436,568	4,221	4,278	4,680
VII. North Midland	3,540,797	1,288,928	1,975	1,907	2,119
VIII. North-Western	2,000,227	2,935,540	6,545	6,324	6,244
IX. Yorkshire	3,654,636	2,015,541	4,535	4,279	4,457
X. Northern	3,492,322	1,151,372	2,513	2,472	2,395
XI. Monmthsh. & Wales	5,218,588	1,312,834	2,261	2,222	2,338

7 DIVISIONS. (England and Wales.)	8 BIRTHS in Quarters ended 30th June. '66.	9 '65.	10 '64.	11 DEATHS in Quarters ended 30th June. '66.	12 '65.	13 '64.
ENGLD. & WALES.... *Totals*	No. 192,459	No. 192,921	No. 188,835	No. 128,692	No. 116,006	No. 116,880
I. London	26,776	26,408	25,066	19,291	17,367	17,457
II. South-Eastern	15,749	15,778	15,493	9,733	9,130	9,281
III. South Midland	11,536	11,839	11,309	6,964	6,598	7,087
IV. Eastern	9,857	10,014	9,744	6,235	5,870	6,100
V. South-Western	14,973	15,201	15,228	10,096	9,465	9,643
VI. West Midland	24,380	24,066	23,949	15,694	12,967	14,053
VII. North Midland	11,872	11,893	11,803	7,477	6,755	7,015
VIII. North-Western	30,412	30,413	30,201	22,883	19,336	19,057
IX. Yorkshire	20,864	21,360	20,740	14,732	13,100	12,785
X. Northern	13,147	13,154	12,459	7,506	6,973	6,649
XI. Monmthsh. & Wales	12,893	12,795	12,843	8,081	8,445	7,753

REMARKS ON THE WEATHER

DURING THE QUARTER ENDING 30TH JUNE, 1866.

By JAMES GLAISHER, ESQ., F.R.S., *&c., Secretary of the Meteorological Society.*

At the beginning of the quarter the weather was cold, the temperature being below the average to the mean amount of 2°·4 during the first nine days. The nights were also very cold, the thermometer frequently registering below freezing point, and rain fell copiously throughout the first two weeks. On the 10th of the month a sudden change to heat set in, continuing till the 28th day, during which time the weather was unusually fine, and very hot for the season, and but little rain descended. This sudden drying weather caused large tracts of land at all parts of the country to be in such a heavy state that spring operations, particularly sowing, were much impeded, and in fact agricultural purposes generally were in a backward state. The budding of trees was in general late, but at places where they had not already shot forth their leaves, the effect of this weather was extraordinary, the leaves appearing and fruit trees blossoming so suddenly, that the whole aspect was changed in a few hours. On the 29th of April a cold ungenial period set in, continuing to the 1st of June, with only an occasional day of somewhat warmer character intervening. The mean daily deficiency of temperature during this time amounted to 3°·1, and at night the thermometer frequently fell to below 32°.

This weather seriously affected all the crops, and cut off much of the blossom from fruit trees. The growth of wheat, barley, and oats was much retarded, although on some very rich lands the cereal crops had in a measure recovered by the end of May. Pasture land made little or no progress, and rain was much required.

On June 2nd, the weather again changed, and became much warmer, and a mean daily excess over the average temperature occurred to the amount of 4°·2, till the 11th day. A similar cold period followed, but on the 21st day the temperature again increased considerably, and fine weather followed to the end of the quarter, the mean excess of temperature amounting to nearly 5°. By this time the crops were in a pretty favourable condition. Hay making had progressed well, though somewhat below the average in quantity. There were some fears that the wheat crop would be light. Potatoes were promising, and free from disease.

To the end of the quarter there were no choleraic meteorological symptoms.

The mean temperature of April was 47°·9, being 2°·0 below the average of the preceding 95 years, 1°·1 above the average of 25 years, and 4°·4 below the temperature of last year.

The mean temperature of May was 50°·1, being 2°·0 below the average of the last 25 years, and lower than any other May, excepting in 1845, 1855, and 1856, when the values were respectively 49°·5, 48°·8, and 49°·4.

The mean temperature of June was 60°·9, being 1°·9 above the average of the preceding 25 years, and higher than any other year since 1859.

The mean high day temperatures were above their averages in April and June to the respective amounts of 0°·8 and 2°·2, and 3°·2 below the average in May.

The mean low night temperatures were above their averages both in April and June to the amounts of 1°·9 and in May below the average to the daily amount of 3°·5.

Therefore in April and June both the days and nights were warm, but considerably colder than usual in May.

The daily range of temperature was 1°·1 smaller than the average in April, and somewhat greater than the average value in both May and June.

The fall of rain was 0°·7 in. above the average in April, differed but little from it in May, and 1°·6 in. greater than the average in June.

The mean temperature of the air at Greenwich in the three months ending May, constituting the three spring months, was 46°·2, being 1°·0 below the average of the preceding 25 years.

1866. Months.	Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Feet of Air.	
	Air.			Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames				
	Mean.	Diff. from Aver-age of 95 Years.	Diff. from Aver-age of 25 Years.	Mean.	Diff. from Aver-age of 25 Years.	Mean.	Diff. from Aver-age of 25 Years.	Mean.	Diff. from Aver-age of 25 Years.		Mean.	Diff. from Aver-age of 25 Years.	Mean.	Diff. from Aver-age of 25 Years.
	°	°	°	°	°	°	°	°	°	°	In.	In.	Gr.	Gr.
April	47·9	+2·0	+1·1	44·9	+1·2	41·5	+1·2	17·4	−1·1	51·3	·262	+·011	3·0	+0·1
May	50·1	−2·5	−2·9	45·6	−3·7	40·8	−4·9	20·6	+0·3	52·6	·255	−·019	2·9	−0·6
June	60·9	+2·8	+1·9	56·9	+2·3	53·5	+2·8	21·2	+0·4	62·6	·410	+·035	4·6	+0·4
Mean......	53·0	+0·8	0·0	49·1	−0·1	45·3	−0·3	19·7	−0·1	55·5	·309	·000	3·5	0·0

1866. Months.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Hori-zontal Move-ment of the Air.	Reading of Thermometer on Grass.				
										Number of Nights it was			Low-est Read-ing at Night.	High-est Read-ing at Night
	Mean.	Diff. from Aver-age of 25 Years.	Mean.	Diff. from Aver-age of 25 Years.	Mean.	Diff. from Aver-age of 25 Years.	Amnt.	Diff. from Aver-age of 51 Years.		At or below 30°.	Be-tween 30° and 40°.	Above 40°.		
			In.	In.	Gr.	Gr.	In.	In.	Miles.				°	°
April	79	0	29·743	−·026	543	0	2·4	+0·7	292	2	20	8	28·3	45·8
May	71	− 5	29·813	+·039	542	0	1·9	−0·2	240	7	18	6	26·0	47·1
June	77	+ 3	29·774	−·025	529	− 2	3·6	+1·6	242	0	5	25	35·1	56·9
Mean......	86	− 1	29·777	−·004	538	− 1	Sum 7·9	Sum +0·7	Mean 258	Sum 9	Sum 43	Sum 39	Lowest 26·0	Highest 56·9

Note.—In reading this table it will be borne in mind that the sign (−) minus signifies below the average, and that the sign (+) plus signifies above the average.

ENGLAND:—*Meteorological Table, Quarter ended 30th June,* 1866.

1	2	3	4	5	6	7	8	9
NAMES OF STATIONS.	Mean Pressure of Dry Air reduced to the Level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	*Mean Temperature of the Air.*	Mean Degree of Humidity.
	in.	°	°	°	°	°	°	
Guernsey	29·595	76·5	33·5	43·0	29·2	10·3	51·2	90
Ventnor	29·644	78·0	38·0	40·0	29·0	10·7	54·8	77
Barnstaple	29·595	87·5	32·0	55·5	40·5	16·6	54·0	76
Royal Observatory	29·654	86·5	32·6	53·9	43·2	19·8	53·0	76
Royston	29·658	91·2	28·3	62·9	48·5	21·7	52·4	77
Lampeter	29·654	90·2	23·0	67·2	48·0	20·7	52·1	77
Diss (Norfolk)	29·667	84·5	29·0	55·5	44·5	21·7	52·9	72
Derby	29·666	84·0	27·0	57·0	43·3	17·2	50·4	73
Liverpool	29·692	82·5	33·1	49·4	35·7	11·4	51·7	74
Wakefield	29·676	86·7	24·5	62·2	47·3	20·3	51·3	76
Stonyhurst	29·630	83·8	27·8	56·0	43·1	17·0	49·9	77
North Shields	29·735	72·5	31·0	41·5	30·7	12·0	46·9	85

10	11	12	13	14	15	16	17	18
	WIND.						RAIN.	
NAMES OF STATIONS.	Mean estimated Strength.	Relative Proportion of				Mean Amount of Cloud.	Number of Days on which it fell.	Amount collected.
		N.	E.	S.	W.			
								in.
Guernsey	1·2	8	9	6	7	3·9	36	6·3
Ventnor	—	1	11	5	13	—	35	4·8
Barnstaple	1·2	4	9	8	9	2·5	34	4·7
Royal Observatory	0·2	5	9	7	9	6·4	47	7·9
Royston	—	7	7	7	9	5·6	40	5·4
Lampeter	0·8	4	9	10	7	6·1	38	6·3
Diss (Norfolk)	1·3	6	9	8	7	5·6	33	6·1
Derby	—	5	11	4	10	—	42	6·9
Liverpool	1·4	6	8	8	8	5·6	39	5·1
Wakefield	1·7	8	7	6	9	6·1	39	4·7
Stonyhurst	0·6	8	9	5	8	6·5	46	8·1
North Shields	1·0	7	9	6	8	5·2	40	4·3

No. II.—SCOTLAND.

MARRIAGES, BIRTHS, AND DEATHS IN THE QUARTER ENDED 30TH JUNE, 1866.

Scotland, for the purposes of registration, is at present divided into 1,014 districts; and this return comprises the BIRTHS, DEATHS, and MARRIAGES registered in these districts (with the single exception of the inaccessible island of St. Kilda), during the quarter ending 30th June, 1866. From these it would appear that births, deaths and marriages have all been considerably above the average of the corresponding quarter of the ten previous years.

BIRTHS.—29,801 births were registered in Scotland during the quarter ending 30th June, 1866, being in the annual proportion of 378 births in every 10,000 persons of the estimated population. This is considerably above the average proportion of the same quarter during the ten previous years, which only yielded a proportion of 274 births for every 10,000 persons. As showing that this increase is owing to some cause not affecting Scotland alone, it may be mentioned that the births in England, during the quarter ending 30th June, were also slightly above the average of the same quarter in former years. Thus, during that quarter, 192,459 births were registered in England, being in the proportion of 363 births in every 10,000 persons of the population; the average of the same quarter during the ten previous years being 62 births in a like population.

The town and rural districts exhibited the usual difference in the proportion of their births. Thus, in the 126 town districts (which embrace the towns with populations of 2,000 and upwards), 17,652 births were registered; while in the 888 rural districts (embracing the remainder of the population of Scotland), only 12,149 births occurred; thus indicating an annual proportion of 418 births in every 10,000 persons in the town districts, but only 331 births in a like population in the rural districts.

TABLE I.—*Proportion of Illegitimate in every Hundred Births in the Divisions and Counties of Scotland, during the Quarter ending 30th June, 1866.*

Divisions.	Per Cent. of Illegitimate.	Counties.	Per Cent. of Illegitimate.	Counties.	Per Cent. of Illegitimate.	Counties.	Per Cent. of Illegitimate.
SCOTLAND	9·6						
Northern	7·1	Shetland	3·3	Forfar	12·5	Lanark	8·2
North-Western	7·3	Orkney	7·3	Perth	11·1	Linlithgow .	8·4
North-Eastern	15·1	Caithness	9·9	Fife	8·1	Edinburgh .	9·0
East Midland ..	10·7	Sutherland....	5·2	Kinross	7·1	Haddington	5·8
West Midland.	7·6	Ross and Cromarty	6·4	Clackmannan	8·2	Berwick	7·7
South-Western	8·4	Inverness	8·1	Stirling	7·8	Peebles........	7·7
South-Eastern.	8·6	Nairn	11·9	Dumbarton ..	8·3	Selkirk	10·0
Southern	12·4	Elgin	15·8	Argyll	6·4	Roxburgh ..	10·5
		Banff	11·5	Bute	9·3	Dumfries	12·8
		Aberdeen	15·7	Renfrew........	8·7	Kirkcudbright ..	12·1
		Kincardine....	16·2	Ayr................	8·5	Wigtown	14·6

Of the 29,801 children born during the quarter, 26,912 were legitimate, and 2,889 illegitimate; thus indicating that 9·6 per cent. of all the children born were illegitimate. The proportion of illegitimate children was, as usual, lowest in the town, and highest in the rural districts, only 9·4 per cent. being illegitimate in the town, but 10 per cent. in the rural districts. Table I exhibits the proportion of illegitimate births in the several divisions and counties of Scotland, and generally accords with previous returns, the counties embraced in the north-eastern and southern divisions exhibiting by far the highest proportion of illegitimate children.

Of the children born during the quarter, 15,320 were males, and 14,481 females; thus indicating that during the quarter 105·8 boys were born for every 100 girls. 9,713 births were registered during April, 10,329 during May, and 9,759 during June; being at the rate of 324 births daily in Scotland during April, 333 daily during May, and 325 daily during June.

DEATHS.—18,556 deaths were registered in Scotland during the second quarter of 1866, being in the annual proportion of 235 deaths in every 10,000 persons of the estimated population. This is a very high death-rate for the quarter, and greatly above the average of the ten previous years, which was only in the proportion of 217 deaths in every 10,000 persons. The deaths in England during the second quarter exhibited the same increase, being high above the average, showing that the same unhealthy influences existed over England as over Scotland. Thus, during the quarter ending 30th June, 1866, there were registered 128,692 deaths in England, which gives the annual proportion of 242 deaths in every 10,000 persons of the population; the average of the same quarter during the ten previous years being only 218 deaths in a like population.

TABLE II.—*Number of Births, Deaths, and Marriages in Scotland, and in the Town and Country Districts during the Quarter ending 30th June,* 1866, *and their Proportion to the Population; also the Number of Illegitimate Births, and their Proportion to the Total Births.*

	Population.		Total Births.			Illegitimate Births.		
	Census, 1861.	Estimated, 1866.	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every
SCOTLAND	3,062,294	3,153,413	29,801	3·78	26	2,889	9·6	10·3
126 town districts	1,603,875	1,688,288	17,652	4·18	23	1,673	9·4	10·5
888 rural "	1,458,419	1,465,125	12,149	3·31	30	1,216	10·0	9·9

	Population.		Deaths.			Marriages.		
	Census, 1861.	Estimated, 1866.	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every
SCOTLAND	3,062,294	3,153,413	18,556	2·35	42	6,019	0·76	131
126 town districts	1,603,875	1,688,288	11,682	2·76	36	3,892	0·92	108
888 rural "	1,458,419	1,465,125	6,874	1·87	53	2,127	0·58	172

The deaths in the town districts, as usual, greatly exceeded those of the rural districts. Thus, in the 126 town districts, 11,682 deaths were registered, but only 6,874 deaths in the 888 rural districts; indicating an annual death-rate of 276 deaths in the town, but only 187 deaths in the rural districts, in every 10,000 persons.

Of the deaths, 6,260 were registered in April, 6,540 in May, and 5,756 in June; being at the rate of 209 deaths daily in Scotland during April, 211 daily during May, and 192 daily during June. May thus presents the strange anomaly of having been a more fatal month to the inhabitants of Scotland than April.

INCREASE OF THE POPULATION.—As the births numbered 29,801, and the deaths 18,556, the natural increase of the population by births was 11,245. From that number ought to be deducted all the Scottish emigrants. From a return furnished to the Registrar-General by the Emigration Commissioners, it appears that 80,303 persons emigrated from the ports of Great Britain and Ireland during the quarter ending 30th June, 1866; of whom 18,997 were English, 4,493 were Scotch, 44,076 were Irish, 10,668 foreigners, while of 2,068 the nativity was not ascertained. If 118 persons be allowed as the proportion of those whose origin was not ascertained, the total Scottish emigrants would amount to 4,611 during the quarter; and that number deducted from the excess of births over deaths, would leave 6,634 as the increase of the population during the quarter, making no allowance for the emigration to England or Ireland, nor for the drafts to the army, navy, &c.

MARRIAGES.—6,019 marriages were registered in Scotland during the quarter ending 30th June, 1866, being in the annual proportion of 76 marriages in every 10,000 persons. This is a much higher proportion than the average of the corresponding quarter during the ten previous years, which only gave a marriage-rate of 69 marriages in every 10,000 persons. It may, however, be mentioned, that the marriage-rate in Scotland has been steadily increasing since 1863. It is possibly the increased number of marriages which is now beginning to tell on the births, and causing their proportion also to exceed that of former years.

The increased proportion of marriages is chiefly seen in the town districts. Thus, in the 126 town districts, 3,892 marriages were registered, but only 2,127 in the 888 rural districts; thus indicating an annual proportion of 92 marriages in every 10,000 persons in the town districts, but only 58 marriages in a like population in the rural districts.

1,470 marriages were registered in April, 1,056 in May, and 3,493 in June.

HEALTH OF THE POPULATION.—The very high mortality which prevailed during the second quarter of the year 1866, appears to have been chiefly caused by the increased number of deaths among the aged, and by the deaths among children, from the prevalence of scarlatina and hooping-cough. Continued fever, in its various forms of typhus, enteric or typhoid, &c., seems to be everywhere abating, though the epidemic fever-wave seems at last to have reached the Shetland Islands, and caused considerable sickness and mortality there. The health of the general mass of the adult population has, however, been good. No cases of epidemic cholera had occurred in Scotland when the quarter closed, but from its prevalence on the Continent and in England, it may be expected to attack our population during the autumnal months, when diarrhœa becomes common. It is a remarkable fact, that both in 1832 and in 1848, when we had severe attacks of epidemic cholera in Scotland, that disease was preceded by epidemic typhus, which just died out when cholera broke out. The epidemic typhus which has been raging over Scotland for the past three years is just dying out, so that the same succession of epidemic diseases seems to be recurring as in former years. This striking fact would seem to prove that even diseases recur in cycles.

WEATHER.—The weather during the first two months of the quarter was colder, drier, and with a greater prevalence of east winds than usual; but during the month of June the heat was sometimes oppressive, and the mean temperature was above the avearge.

During April the weather was very much as usual, most commonly frost in the morning, and during the day sudden showers alternating with bright sunshine. The month, however, closed with a snow storm in all the higher parts of the country, leaving the hills white.

The cold period which commenced on the close of April continued till the

19th of May, and though warm balmy weather set in after that period, the mean temperature of the month fell nearly two degrees short of its average. The wind during the whole month was almost constantly from the east, and the drought was great.

TABLE III.—*Number of Births, Deaths, and Marriages in Scotland, and their Proportion to the Population, Estimated to the Middle of each Year, during each Quarter of the Years* 1866 *to* 1862 *inclusive.*

	1866.		1865.		1864.		1863.		1862.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
***1st Quarter*—**										
Births	28,876	3·66	28,608	3·65	28,177	3·61	26,729	3·44	27,089	3·51
Deaths	19,075	2·42	20,786	2·65	22,576	2·89	19,227	2·47	19,420	2·51
Marriages ..	5,627	0·71	5,407	0·69	5,333	0·68	5,090	0·65	4,763	0·62
Mean Temperature	38°·0		35°·3		35°·7		40°·9		38°·8	
***2nd Quarter*—**										
Births	29,801	3·78	30,332	3·86	29,992	3·84	29,651	3·82	28,728	3·73
Deaths	18,556	2·35	17,066	2·17	18,445	2·36	17,947	2·31	17,885	2·25
Marriages ..	6,019	0·76	5,698	0·72	5,710	0·73	5,557	0·71	5,185	0·67
Mean Temperature	49°·3		51°·5		49°·9		49°·0		49°·4	
***3rd Quarter*—**										
Births	—	—	27,320	3·48	27,063	3·47	26,362	3·40	25,783	3·34
Deaths	—	—	15,907	2·02	16,131	2·06	16,249	2·09	14,235	1·84
Marriages ..	—	—	5,335	0·68	4,993	0·64	4,863	0·62	4,570	0·59
Mean Temperature	—		57°·5		54°·5		53°·9		54°·4	
***4th Quarter*—**										
Births	—	—	26,866	3·42	27,213	3·49	26,583	3·42	25,469	3·30
Deaths	—	—	17,062	2·17	17,151	2·19	17,998	2·32	16,155	2·09
Marriages ..	—	—	7,137	0·91	6,639	0·85	6,577	0·84	6,079	0·78
Mean Temperature	—		43°·4		42°·0		43°·6		42°·0	
***Year*—**										
Population .	—		3,136,057		3,118,701		3,101,345		3,083,989	
Births	—	—	113,126	3·60	112,445	3·60	109,325	3·52	107,069	3·47
Deaths	—	—	70,821	2·25	74,303	2·38	71,421	2·30	67,195	2·17
Marriages ..	—	—	23,577	0·75	22,675	0·72	22,087	0·71	20,597	0·66

During the first week of June dense fogs prevailed, especially on the east coast, where the contending cold easterly and moist westerly currents meet. After this a period of great heat set in, during some days of which the variations in daily temperature were extreme, and appeared to exert a most deleterious effect on the aged. Thus, on the 17th, 18th, and 19th of the month, the black bulb thermometer exposed on the grass showed the low temperature of 28°, 24°, and 27° Fahr.; while the day temperature ranged from 55° to 69°. In the higher parts of the country this smart morning frost injured the potatoes and turnip crops, and damaged the foliage of the trees. The drought which had existed in May continued during the whole month, causing the hay crop to be much below an average, and stunting the grain crops.

The mean barometric pressure, reduced to the sea level and to 32° Fahr., was 29·935 inches in April, 29·975 inches in May, and 29·881 in June. The mean temperature of the quarter was 49°·3, that of April being 44°·0; that of May 47°·9, and that of June 56°·1. The highest temperature at any station (in the shade) was 71°·6 in April, 78° in May, and 87°·5 in June. The lowest temperature (in the shade) was 20°·0 in April, 20°·0 in May, and 29°·3 in June. The mean daily range of temperature was 13°·1 in April, 17°·9 in May, and 15°·8 in June. The mean degree of humidity of the atmosphere was 84 in April, 77 in May, and 82 in June. The number of days on which rain, hail, or snow fell, was 13 in April, 10 in May, and 12 in June; with a mean depth of water of 1·68 inches in April, 1·36 inches in May, and 1·85 inches in June. Winds with an easterly point, on an average of all the stations, blew 15 days in April, 11 in May, and 9 in June. Winds with a westerly point blew 8 days in April, 14 in May, and 12 in June.

SCOTLAND:—MARRIAGES, BIRTHS, *and* DEATHS *Registered in the Quarter ended 30th June*, 1866.

1 DIVISIONS. (Scotland)	2 AREA in Statute Acres.	3 POPULATION, 1861. (*Persons.*)	4 Marriages.	5 Births.	6 Deaths.
		No.	No.	No.	No.
SCOTLAND .... *Totals*	19,639,377	3,062,294	6,019	29,801	18,556
I. Northern	2,261,622	130,422	76	815	578
II. North-Western........	4,739,876	167,329	147	1,025	785
III. North-Eastern	2,429,594	366,783	616	3,369	2,110
IV. East Midland	2,790,492	523,822	1,087	4,702	2,849
V. West Midland	2,693,176	242,507	403	2,099	1,182
VI. South-Western........	1,462,397	1,008,253	2,371	11,928	7,482
VII. South-Eastern	1,192,524	408,962	1,000	4,080	2,467
VIII. Southern	2,069,696	214,216	319	1,783	1,103

No. III.—IRELAND.

MARRIAGES IN THE QUARTER ENDED 31ST MARCH, 1866; AND BIRTHS AND DEATHS IN THE QUARTER ENDED 30TH JUNE, 1866.

This return includes the MARRIAGES *registered* during January, February, and March, 1866; and the BIRTHS and DEATHS *registered* during April, May, and June, 1866, in the 721 registrars' districts of Ireland. The districts are co-extensive with the dispensary districts of the 163 Poor Law Unions; which latter form the districts of the Superintendent Registrars.

MARRIAGES.—The number of marriages *registered* in Ireland during the first three months of the present year amounted to 12,014, equal to an annual ratio of 1 in every 116, or ·862 per cent. of the *estimated* population.* The number *registered* during the corresponding period of last year was 12,266.

Of the 12,014 marriages *registered* during the first quarter of this year, 9,696 were between Roman Catholics, representing an annual ratio of 1 marriage in every 116, or ·861 per cent. of the Roman Catholic population;† and the remaining 2,318 marriages were between Protestants, being equal to an annual ratio of 1 in every 139, or ·719 per cent. of the Protestant population.†

BIRTHS.—There were 38,816 births *registered* in Ireland during the quarter ending 30th June last—19,893 boys and 18,923 girls—representing an annual ratio of 1 in every 35·9, or 2·79 per cent. of the *estimated* population;* the births *registered* during the corresponding quarter of last year were 39,163, and in 1864 they were 38,701.

In the 12 following unions or superintendent registrars' districts the birth-rate exceeded 1 in 31, viz.—Belfast, 1 in 21; Millstreet, 1 in 23; Dunmanway, 1 in 24; Castletown and Clifden, each 1 in 25; Dingle, Glin, and Killarney, each, 1 in 27; Oughterard, 1 in 28; and Larne, Lurgan, and Skibbereen, each, 1 in 29; whilst in the twelve undermentioned the births *registered* did not equal an annual ratio of 1 in 53, viz.—Borrisokane, Mountbellew, and Urlingford, each, 1 in 54; Ballyshannon, Gortin, and Tuam, each, 1 in 55; Swineford, 1 in 56; Glennamaddy, 1 in 57; Roscrea, 1 in 58; Parsonstown, 1 in 59; Dunfanaghy, 1 in 68; *and Ballyvaghan,* 1 *in* 95.

DEATHS.—The deaths *registered* in Ireland during the second quarter of the present year amounted to 24,763—12,259 males and 12,504 females—affording an annual ratio of 1 in every 56·3, or 1·78 per cent. of the *estimated* population. The numbers *registered* during the corresponding quarters of 1864 and 1865 were 24,448 and 24,380 respectively.

In the following ten unions or superintendent registrars' districts the rate of mortality during the quarter exceeded 1 in 45, viz.—Belfast, 1 in 30; Dublin, North and South, 1 in 39 and 1 in 37 respectively; Clonmel and Enniscorthy, each, 1 in 40; Celbridge, Clogheen, and Waterford, each, 1 in 43; and Bailieborough and Newtownards, each, 1 in 44; whereas in the eight following the number of deaths *registered* during the quarter *does not represent an annual ratio of* 1 *in* 100:—Castlebar, 1 in 102; Croom, 1 in 104; Boyle, 1 in 111; Donaghmore, 1 in 119; Newcastle, 1 in 120; Tuam, 1 in 135; Dunfanaghy, 1 in 160; *and Ballyvaghan,* 1 *in* 284.

EMIGRATION,—According to the returns obtained by the enumerators, the number of emigrants who left the ports of Ireland, during the quarter ended 30th June last, amounted to 41,124—24,331 males and 16,793 females—being 3,536 more than the number who emigrated during the corresponding quarter of 1865.

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* For estimated population see p. 45 of the Quarterly Report, where it is given for the middle of each year from 1801 to 1866 inclusive. For 1865 the estimate is 5,641,086, and for 1866, 5,571,971. Hence it would appear that the population of Ireland has decreased 216,000 since the last census was taken.—ED. *S. J.*

† According to the Census of 1861.

ESTIMATED DECREASE OF THE POPULATION.—The number of births *registered* during the quarter ended 30th June last being 38,816; the deaths 24,763; and the number of emigrants 41,124—(according to the returns obtained by the enumerators at the several seaports);—a decrease of 27,071 would therefore appear to have taken place in the population of Ireland during that period.

PRICES OF PROVISIONS AND PAUPERISM.—The price of Messrs. Manders and Co.'s 4 lb. loaf during the first twelve weeks of the second quarter of the present year was 6½*d.*, being one halfpenny higher than the price through the entire of the corresponding quarter of 1865; it was raised to 7*d.* during the last week of the quarter.

The average price of oatmeal for the second quarter of 1866 was 15*s.* 8*d.* per cwt.; it rose from 14*s.* 6*d.* per cwt. in the first week of the quarter to 16*s.* 6*d.* in the last week; the average price for the corresponding quarter of 1865 was 14*s.* 1*d.*

The average prices of potatoes during the past quarter at the Dublin Potato Market were 3*s.* 1*d.* to 3*s.* 11*d.* per cwt., differing very slightly from the averages for the corresponding quarter of last year.

The prices of beef at the Dublin Cattle Market ranged, during the quarter ending 30th June last, from 55*s.* to 80*s.* per cwt., the average for the quarter being 58*s.* to 72*s.* 6*d.*; the average price for the corresponding quarter of last year was only 55*s.* to 67*s.* 6*d.* per cwt.

The average number of persons in Ireland receiving indoor relief on Saturdays during the three months ending 30th June last was 51,404, against 54,852 for the corresponding period of 1865. On Saturday in the first week of the quarter the number was 54,810; on Saturday in the last week the number had decreased to 48,444.

The average weekly number of persons receiving outdoor relief during the quarter was 11,982, against 10,565 for the second quarter of 1865.

Of the persons receiving indoor relief during the second quarter of the present year an average number of 466 in each week were located in asylums for the blind and the deaf and dumb, and in extern hospitals; in the corresponding quarter of 1865 the average weekly number was 475.

THE WEATHER.—The following meteorological observations, taken at the Ordnance Survey Office,* Phœnix Park, Dublin, during the second quarter of the years 1864, 1865, and 1866, respectively, have been obligingly furnished by Captain Wilkinson, R.E., by direction of the Superintendent of the Ordnance Survey.

The mean height of the barometer during the second quarter of the present year was 29·761 inches (in the corresponding quarter of 1865 and 1864 it was 29·916 inches, and 29·838 inches respectively); the highest reading (30·277 inches) was on the 23rd April, at 9·30 A.M., wind S.W.; and the lowest (29·252 inches) on the 18th June, at 3·30 P.M., wind N.W.

The mean temperature of the air during the quarter was 51·5° (in the corresponding quarter of 1865 it was 54·8°, and in the second quarter of 1864 it was 53·6°); the maximum temperature (79·8°) was on the 28th June, and the minimum (29·0°) was on the 4th April.

Rain or snow fell on 48 days during the quarter. The rain-fall measured 7·796 inches; in the corresponding quarters of 1865 and 1864 it was 5·816 inches and 4·083 inches respectively. The greatest monthly rain-fall was in June, when 3·652 inches were registered.

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* Latitude 53° 21′ 44″·65 north, longitude 6° 21′ 6″·35 west. Height above the sea 158·8 feet. From the 1st January, 1865, inclusive, the barometer has been corrected for altitude, as well as reduced to 32° Fahrenheit.

The wind blew on 27 days from S.W.; 14 days from N.E.; 12 days from E.; 11 days from N.W.; 9 days from W.; and 7 days from S.E., at 9·30 A.M.; on no day during the quarter did the wind blow from the south at that hour. It was calm on 7 days at 9·30 A.M.

Meteorological Observations taken at the Ordnance Survey Office, Phœnix Park, Dublin.

Months.	Barometer.			Thermometer.			Rain-fall.
	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	
	Inches.	Inches.	Inches.	°	°	°	Inches.
April, 1864	30·166	29·425	29·895	69·1	29·0	50·1	·792
" '65	30·202	29·520	29·974	68·9	31·2	50·2	1·304
" '66	30·277	29·253	29·714	66·4	29·0	47·6	1·927
May, 1864	30·113	29·502	29·870	79·0	31·8	54·4	1·730
" '65	30·176	29·223	29·695	72·9	37·8	53·4	3·578
" '66	30·227	29·299	29·828	70·4	29·5	49·4	2·217
June, 1864	30·126	29·202	29·749	73·7	33·2	56·4	1·561
" '65	30·378	29·328	30·078	83·9	40·0	60·9	·934
" '66	30·078	29·252	29·741	79·8	39·0	57·4	3·652
							Total.
Mean, 2nd qr., 1864	30·135	29·376	29·838	73·9	31·3	53·6	4·083
" '65	30·252	29·357	29·916	75·2	36·3	54·8	5·816
" '66	30·194	29·268	29·761	72·2	32·5	51·5	7·796

Months.	Direction of the Wind at 9·30 A.M. Number of Days on which the Wind blew from the								Calm at 9·30 A.M.
	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	
April, 1864	1	4	8	—	2	6	7	2	—
" '65	1	9	9	—	2	4	3	1	1
" '66	3	7	5	1	—	12	—	—	2
May, 1864	2	2	8	2	1	5	6	5	—
" '65	4	3	5	3	3	10	3	—	—
" '66	1	5	5	4	—	6	3	6	1
June, 1864	3	—	1	1	1	10	13	—	1
" '65	2	3	8	3	—	2	11	1	—
" '66	—	2	2	2	—	9	6	5	4
Total, 2nd qr., 1864	6	6	17	3	4	21	26	7	1
" '65	7	15	22	6	5	16	17	2	1
" '66	4	14	12	7	—	27	9	11	7

HEALTH OF THE PEOPLE.—The state of the public health during the quarter was generally satisfactory, though the number of deaths *registered* was in excess of the number *registered* during the corresponding period of last year.

The low temperature, combined with the harsh easterly winds which prevailed during the months of April and May, rendered pulmonary affections among the young and old extremely fatal, and to these causes must be referred the greater mortality during the past quarter as compared with the corresponding periods of 1864-65.

There was in most districts an absence of epidemic or zymotic diseases, and, save in some exceptional instances, the deaths from scarlatina, fever, measles, small-pox, &c., had notably diminished.

The registrar of the Mohill district (Mohill union), in referring to a malignant type of scarlatina in his locality, makes the following observations:—"It is a remarkable fact that all the fatal cases occurred under almost similar circumstances in *badly ventilated and filthy houses, where the poor sufferers had to breathe a foul and vitiated atmosphere;* in many instances the pigs and patients occupied the same apartments. In families of 9 or 10 attacked at the same time, *where attention was paid to cleanliness and ventilation, not one fatal case took place.*" The registrar of the Mullingar district (Mullingar union) says that of 22 deaths from scarlatina, which were *registered* during the quarter, "all occurred in the town, none in the country portions of the district, showing clearly *the evil of the filthy and uncleansed state of the back streets of this town.*" In many of the districts from which scarlatina has disappeared, the registrars attribute the subsidence of the epidemic to improved sanitary arrangements.

It is satisfactory to find that no deaths from small-pox have been returned from the registrar of the Arklow district (Rathdrum union), as during the quarter ended March 31st, the alarming number of 30 deaths from small-pox had been registered in that district. In the Ballymoney district a child aged 3 months (*not vaccinated*) died from small-pox. In Summerhill district (Trim union) the registrar notes that "two deaths from small-pox were registered in the past quarter, one in the person of an infant lately brought from Dublin, the second an adult, *neither of whom had been vaccinated.*"

Three deaths from small-pox occurred in the Boyle district; the registrar makes no reference as to vaccination. With a view of demonstrating the protective powers of vaccination, the registrar of Fethard, Arthurstown sub-district (New Ross union), relates the following interesting particulars:—"A sailor returned from a foreign voyage to his native village, Ballyhack, and in a few days after was seized with small-pox in its confluent and most virulent form. The village swarms with a population steeped in poverty, and is in *every way* badly calculated to resist the extension of a contagious disease. The man's residence was in its centre, and segregation from its neighbours impossible. *Vaccination, however, had been for years carefully attended to;* an infant residing in the house had been vaccinated only a few weeks before. The man recovered, and although two months have gone by, there has not been another case of small-pox amongst the inhabitants."

Fever has generally been of a milder type. The number of registrars who refer to the improved sanitary condition of their districts increases every quarter. It is to be hoped that the ample powers which the new sanitary act affords for suppressing nuisances and protecting the public against the spread of contagious diseases may soon be brought into action, so that the evils at present existing, and which have been so forcibly described by the registrars, may be neutralized. In the Scotstown district (Monaghan union), two cases of English cholera were registered in the month of June, both having proved fatal within 48 hours; two other members of the same family were attacked, but recovered. In the Malin district (Inishowen union), a case of English cholera proved fatal in 15 hours.

Some of the persons whose deaths were registered during the quarter had attained very advanced periods of life; thus in the Templemartin district (Bandon union), "the death of a person aged 106 was registered;" in Aughnacloy district (Clogher union), the death of a person aged 104 was registered; and the deaths of two centenarians were registered, one in Shinrone (Roscrea union), and the other in Ballycastle.

MARRIAGES.—The marriage-rate during the quarter ending 31st March last, was highest in the "south-western" and "western" divisions, and lowest in the "eastern" division. This was also the case in the first quarter of 1865.

The Order of the Eight Divisions as regards the Annual Rate represented by the Number of Marriages Registered during the First Quarter of the Years 1865 *and* 1866, *is shown in the following Statement.*

Divisions.	Ratio to Population of 1861 Quarter ending	
	31st March, 1865.	31st March, 1866.
I. South-Western........	1 in 76	1 in 81
II. Western	" 88	" 83
III. South-Eastern	" 104	" 121
IV. North Midland........	" 135	" 161
V. North-Western........	" 142	" 130
VI. South Midland	" 143	" 162
VII. North-Eastern	" 161	" 152
VIII. Eastern	" 175	" 171

Note.—The divisions in this and the two following tables are arranged according to the ratios of the first column.

BIRTHS.—The highest birth-rate attained in any of the divisions during the second quarter of the years 1864, 1865, and 1866, was 1 in 32. This was the rate for the "south-western" in 1864, and for the "north-eastern" in 1865 and 1866. The "south midland" ranked *fifth* as to birth-rate during the second quarter of 1864; it fell to *seventh* place in the corresponding quarter of 1865, and to *eighth*, or last, place for the past quarter, the ratios for this division being 1 in 41, 43, and 45 respectively, for the three periods alluded to.

The Numerical Order of the Eight Divisions as regards the Annual Rate represented by the Number of Births Registered during the Second Quarter of 1864, 1865, *and* 1866, *is shown in the following Statement.*

Divisions.	Ratio, Quarter ending		
	30th June, 1864.	30th June, 1865.	30th June, 1866.
I. South-Western...........	1 in 32	1 in 33	1 in 34
II. North-Eastern	" 34	" 32	" 32
III. South-Eastern	" 36	" 37	" 37
IV. Eastern	" 37	" 37	" 37
V. South Midland............	" 41	" 43	" 45
VI. North Midland............	" 42	" 41	" 41
VII. Western	" 42	" 44	" 42
VIII. North-Western...........	" 45	" 41	" 44

DEATHS.—The death-rate in the "eastern" division during the quarter ending 30th June last was 1 in 46. This is the highest rate of mortality which has occurred during the second quarter of the year in any division since registration commenced in Ireland. The number of deaths *registered* in the "western" division during the quarter represents an annual ratio of only 1 in 78; and in the corresponding quarter of 1864 and 1865 the rate afforded was only 1 in 77.

The following Statement shows the Eight Divisions, Arranged according to the Annual Rate of Mortality afforded by the Number of Deaths Registered during the Second Quarter of 1864, 1865, *and* 1866.

Divisions.	Ratio to Population. Quarter ending		
	30th June, 1864.	30th June, 1865.	30th June, 1866.
I. South-Eastern	1 in 50	1 in 53	1 in 52
II. North-Eastern	" 52	" 51	" 49
III. Eastern	" 54	" 50	" 46
IV. South Midland	" 60	" 64	" 63
V. South-Western	" 60	" 62	" 64
VI. North-Western	" 61	" 66	" 70
VII. North Midland	" 73	" 70	" 68
VIII. Western	" 77	" 77	" 78

Births, Deaths, and Marriages in each Division of Ireland.

Divisions.	Area in Statute Acres.	Population in 1861.	March Quarter, 1866. — Marriages.	June Quarter, 1866.	
				Births.	Deaths.
I. North-Eastern	2,328,305	1,124,041	1,849	8,875	5,687
II. North-Western	2,392,501	574,745	1,105	3,271	2,065
III. Eastern	1,993,016	829,569	1,213	5,678	4,489
IV. North Midland	2,019,408	575,289	893	3,519	2,111
V. South Midland	2,361,709	515,272	794	2,853	2,037
VI. Western	4,088,459	822,878	2,473	4,871	2,631
VII. South-Eastern	1,826,172	500,957	1,032	3,388	2,413
VIII. South-Western	3,313,071	855,813	2,655	6,361	3,330
Total of Ireland	20,322,641	5,798,967	12,014	38,816	24,763

No. IV.—GREAT BRITAIN AND IRELAND.

SUMMARY *of* MARRIAGES, *in the Quarter ended* 31*st March*, 1866; *and* BIRTHS *and* DEATHS, *in the Quarter ended* 30*th June*, 1866.

COUNTRIES.	AREA in Statute Acres.	POPULATION, 1861. (*Persons.*)	Marriages.	Births.	Deaths.
		No.	No.	No.	No.
England and Wales	37,324,883	20,066,224	37,576	192,459	128,692
Scotland	19,639,377	3,062,294	5,627	29,801	18,556
Ireland	20,322,641	5,798,967	12,014	38,816	24,763
GREAT BRITAIN AND IRELAND	77,286,901	28,927,485	55,217	261,076	172,011

Note.—The number of deaths in Ireland during the March quarter is erroneously stated at p. 312 as 4,029 instead of 27,824; and the number in Great Britain and Ireland as 161,337 instead of 185,132.

Trade of United Kingdom, 1866-65-64.—*Distribution of* Exports *from United Kingdom, according to the Declared Real Value of the Exports; and the Computed Real Value (Ex-duty) of* Imports *at Port of Entry, and therefore including Freight and Importer's Profit.*

Merchandise (*excluding Gold and Silver*), Imported from, and Exported to, the following Foreign Countries, &c. [000's omitted.]	First Three Months.					
	1866.		1865.		1864.	
	Imports from	*Exports to*	Imports from	*Exports to*	Imports from	*Exports to*
I.—Foreign Countries:	£	£	£	£	£	£
Northern Europe; viz., Russia, Sweden, Norway, Denmark & Iceland, & Heligoland	3,575,	475,	1,871,	312,	2,712,	450,
Central Europe; viz., Prussia, Germany, the Hanse Towns, Holland, and Belgium	6,170,	7,698,	4,952,	4,878,	5,326,	4,834,
Western Europe; viz., France, Portugal (with Azores, Madeira, &c.), and Spain (with Gibraltar and Canaries)	11,930,	3,870,	7,652,	3,767,	8,367,	3,544,
Southern Europe; viz., Italy, Austrian Empire, Greece, Ionian Islands, and Malta	1,112,	2,145,	684,	2,071,	741,	2,005
Levant; viz., Turkey, with Wallachia and Moldavia, Syria and Palestine, and Egypt	5,468,	5,494,	6,785,	3,189,	5,830,	3,306,
Northern Africa; viz., Tripoli, Tunis, Algeria and Morocco	96,	85,	51,	52,	93,	38,
Western Africa	188,	134,	223,	130,	167,	150,
Eastern Africa; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Mooria Islands	18,	36,	42,	15,	29,	10,
Indian Seas, Siam, Sumatra, Java, Philippines; other Islands	106,	462,	508,	481,	67,	458,
South Sea Islands	—	7,	8,	—	—	18,
China, including **Hong Kong**	2,433,	2,263,	2,485,	1,447,	3,781,	1,099,
United States of America	12,242,	9,655,	1,926,	3,277,	3,578,	6,908,
Mexico and Central America	210,	309,	995,	601,	828,	276,
Foreign West Indies and Hayti	297,	725,	680,	918,	415,	710,
South America (Northern), New Granada, Venezuela, and Ecuador	440,	797,	252,	718,	369,	517,
" (Pacific), Peru, Bolivia, Chili, and Patagonia	1,068,	509,	1,108,	828,	1,119,	573,
" (Atlantic) Brazil, Uruguay, and Buenos Ayres	1,948,	2,839,	1,736,	1,982,	1,536,	1,952,
Whale Fisheries; Grnlnd., Davis, Straits, Southn. Whale Fishery, & Falkland Islands	2,	3,	—	—	3,	11,
Total—Foreign Countries	47,303,	37,506,	31,958,	24,656,	34,961,	26,859,
II.—British Possessions:						
British India, Ceylon, and Singapore	5,575,	4,152,	4,549,	5,548,	6,595,	4,906,
Austral. Cols.—New South Wales and Victoria	1,251,	1,970,	892,	1,923,	404,	1,541,
" " So. Aus., W. Aus., Tasm., and N. Zealand	246,	884,	223,	839,	286,	692,
British North America	510,	1,033,	492,	628,	671,	800,
" W. Indies with Btsh. Guiana & Honduras	900,	695,	1,712,	870,	1,786,	881,
Cape and Natal	377,	295,	383,	661,	306,	485,
Brt. W. Co. of Af., Ascension and St. Helena	109,	161,	122,	102,	57,	78,
Mauritius	430,	155,	360,	192,	391,	146,
Channel Islands	118,	140,	95,	217,	153,	284,
Total—British Possessions	9,516,	9,485,	8,828,	10,980,	10,649,	9,808,
General Total £	56,819,	46,991,	40,786,	35,636,	45,610,	36,667,

Note.—The exports above consist of articles of British and Irish produce and manufacture only—the colonial and foreign goods exported are not shown in the monthly tables.

IMPORTS. — (United Kingdom.) — First Five Months (*January — May*, 1866-65-64-63-62.—*Computed Real Value* (*Ex-duty*), *at Port of Entry* (*and therefore including Freight and Importer's Profit*), *of Articles of Foreign and Colonial Merchandise Imported into the United Kingdom.*

(First Five Months.) [000's omitted.] FOREIGN ARTICLES IMPORTED.		1866.	1865.	1864.	1863.	1862.
		£	£	£	£	£
RAW MATLS.—*Textile.*	Cotton Wool	38,398,	17,183,	29,341,	13,924,	5,702,
	Wool (Sheep's)..	6,073,	4,704,	4,211	8,686,	3,268,
	Silk	6,232,	5,734,	4,679,	6,620,	6,162,
	Flax	1,050,	876,	1,936,	1,050,	1,050,
	Hemp	1,064	560,	1,579,	874,	524,
	Indigo	720,	602,	586,	767,	734,
		53,537,	29,659,	42,332,	26,921,	17,440,
" " *Various.*	Hides	952,	693,	694,	804,	814,
	Oils	1,289,	1,105,	911,	1,377,	1,128,
	Metals	1,552	1,441,	1,626,	1,378,	1,490,
	Tallow	532,	894,	882,	392,	487,
	Timber................	1,496,	1,832,	1,832,	1,858,	1,439,
		5,821,	5,205,	5,445,	5,809,	5,358,
" " *Agrcltl.*	Guano	623,	865,	453,	1,167,	315,
	Seeds	1,058,	1,162,	1,485,	1,085,	776,
		1,681,	2,027,	1,938,	2,252,	1,091,
TROPICAL, &c., PRODUCE.	Tea	4,359,	4,008,	4,272,	4,907,	4,471,
	Coffee	991,	1,153,	1,079,	1,200,	926,
	Sugar & Molasses	4,747,	3,612,	4,829,	5,066,	4,756,
	Tobacco	876,	1,003,	910,	650,	870,
	Rice	209,	201,	278,	416,	500,
	Fruits	62,	181,	105,	105,	127,
	Wines	2,063,	1,494,	2,318,	1,816,	1,494,
	Spirits	844,	628,	1,018,	823,	770,
		14,151,	12,280,	14,804,	14,983,	13,414,
FOOD	Grain and Meal.	10,891,	5,704,	7,241,	10,116,	12,836,
	Provisions	3,627,	3,473,	3,363,	3,011,	3,208,
		14,518,	9,177,	10,604,	13,127,	16,044,
Remainder of Enumerated Articles		2,321,	1,707,	1,989,	1,702,	1,314,
TOTAL ENUMERATED IMPORTS		92,029,	60,005,	77,112,	64,794,	54,661,
Add for UNENUMERATED IMPORTS (say)		23,007,	15,014,	19,278,	16,198,	13,665,
TOTAL IMPORTS		115,036,	75,069,	96,390,	80,992,	68,326,

EXPORTS. — (United Kingdom.) — First Six Months (*January — June*), 1866-65-64-63-62.—*Declared Real Value, at Port of Shipment, of Articles of* British *and* Irish *Produce and Manufactures Exported from United Kingdom.*

(First Six Months.) [000's omitted.] British Produce, &c., Exported.		1866.	1865.	1864.	1863.	1862.
		£	£	£	£	£
Manfrs.—*Textile.*	Cotton Manufactures ..	30,418,	21,630,	22,401,	15,542,	15,431,
	„ Yarn	6,681,	8,959,	4,598,	2,967,	3,295,
	Woollen Manufactures	10,534,	8,034,	9,108,	6,084,	5,600,
	„ Yarn	2,181,	2,436,	2,576,	2,213,	1,573,
	Silk Manufactures........	869,	901,	1,029,	874,	1,001,
	„ Yarn	115,	128,	129,	157,	161,
	Linen Manufactures	4,918,	4,056,	4,085,	2,903,	2,255,
	„ Yarn	1,165,	1,069,	1,480,	1,114,	840,
		56,881,	42,213,	45,406,	31,854,	30,156,
„ *Sewed.*	Apparel	1,347,	1,171,	1,136,	1,172,	1,033,
	Haberdy. and Mllnry.	2,803,	2,133,	2,414,	1,817,	1,592,
		4,150,	3,304,	3,550,	2,989,	2,625,
Metals	Hardware	2,131,	1,989,	1,958,	1,618,	1,475,
	Machinery.....................	2,049,	2,593,	2,060,	1,884,	1,821,
	Iron	7,498,	5,829,	6,997,	5,917,	5,071,
	Copper and Brass........	1,427,	1,614,	1,543,	1,963,	1,293,
	Lead and Tin	1,632,	1,282,	1,567,	1,377,	1,347,
	Coals and Culm	2,416,	2,055,	1,940,	1,726,	1,720,
		17,153,	15,362,	16,065,	14,485,	12,727,
Ceramic Manufcts.	Earthenware and Glass	1,198,	1,055,	1,042,	951,	825,
Indigenous Mnfrs.	Beer and Ale................	1,159,	1,210,	940,	887,	814,
	Butter	178,	134,	148,	232,	150,
	Cheese	85,	47,	78,	67,	58,
	Candles	110,	46,	63,	97,	112,
	Salt	199,	97,	144,	142,	152,
	Spirits	78,	129,	295,	205,	150,
	Soda	760,	514,	460,	434,	411,
		2,569,	2,177,	2,128,	2,064,	1,847,
Various Manufcts.	Books, Printed	276,	218,	211,	198,	189,
	Furniture	117,	148,	105,	134,	107,
	Leather Manufactures	940,	1,197,	1,088,	1,044,	1,269,
	Soap	104,	85,	109,	120,	110,
	Plate and Watches	203,	195,	196,	224,	214,
	Stationery	178,	188,	160,	143,	127,
		1,818,	2,026,	1,869,	1,863,	2,016,
Remainder of Enumerated Articles		4,886,	4,449,	4,374,	3,798,	3,531,
Unenumerated Articles..................................		4,202,	3,542,	3,613,	4,010,	3,588,
	Total Exports....................	92,857,	74,128,	78,047,	62,014,	57,315,

SHIPPING.—Foreign Trade.—(United Kingdom.)—First Six Months (*January—June*), 1866-65-64-63.—*Vessels Entered and Cleared with Cargoes including repeated Voyages, but excluding Government Transports.*

(First Six Months.)	1866.			1865.		1864.		1863.	
Entered:—	Vessels.	Tonnage (000's omitted.)	Average Tonnage.	Vessels.	Tonnage (000's omitted.)	Vessels.	Tonnage (000's omitted.)	Vessels.	Tonnage (000's omitted.)
Vessels belonging to—	No.	Tons.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Russia	167	58,	347	151	55,	255	89,	135	44,
Sweden	437	81,	185	385	64,	522	82,	458	73,
Norway	1,571	344,	219	1,420	303,	1,481	297,	1,416	293,
Denmark	988	103,	104	942	95,	1,332	126,	1,474	139,
Prussia and Ger. Sts.	1,798	443,	246	1,508	345,	800	216,	1,754	416,
Holland and Belgium	1,065	141,	132	958	128,	892	121,	843	117,
France	1,643	155,	94	1,401	123,	1,217	98,	1,417	118,
Spain and Portugal	188	59,	314	218	69,	215	61,	192	59,
Italy & other Eupn. Sts.	531	164,	309	411	119,	226	66,	225	68,
United States	230	233,	1,013	117	127,	202	232,	395	406,
All other States	5	2,	400	15	6,	7	3,	9	3,
	8,623	1,783,	207	7,526	1,434,	7,149	1,391,	8,318	1,736,
United Kingdm. & Depds.	12,149	4,111,	338	10,514	3,260,	10,552	3,255,	10,170	3,034,
Totals Entered	20,772	5,894,	284	18,044	4,694,	17,701	4,646,	18,488	4,770,
Cleared:—									
Russia	200	77,	385	196	77,	229	95,	161	53,
Sweden	436	85,	195	348	62,	470	77,	429	73,
Norway	1,004	205,	204	933	196,	1,013	213,	875	163,
Denmark	935	101,	108	1,013	106,	1,347	129,	1,541	146,
Prussia and Ger. Sts.	2,297	496,	216	2,007	429,	1,150	275,	2,394	488,
Holland and Belgium	1,033	170,	165	1,081	164,	817	126,	901	139,
France	2,093	227,	108	2,009	204,	2,286	226,	2,256	217,
Spain and Portugal	170	53,	312	192	61,	196	58,	175	59,
Italy & other Eupn. Sts.	602	200,	332	538	108,	418	135,	302	96,
United States	283	283,	1,000	158	156,	213	236,	348	353,
All other States	10	5,	500	13	4,	14	6,	11	4,
	9,063	1,902,	210	8,488	1,639,	8,243	1,576,	9,393	1,791,
United Kingdm. & Depds.	14,672	4,875,	332	13,734	4,228,	14,068	4,214,	13,816	3,827,
Totals Cleared	23,735	6,777,	286	22,222	5,867,	22,311	5,790,	23,209	5,618,

GOLD AND SILVER BULLION AND SPECIE.—IMPORTED AND EXPORTED.—(United Kingdom.)—*Computed Real Value for the* First Six Months (*January—June*), 1866-65-64.

[000's omitted.]

(First Six Months.)	1866.		1865.		1864.	
	Gold.	*Silver.*	Gold.	*Silver.*	Gold.	*Silver.*
Imported from:—	£	£	£	£	£	£
Australia	2,617,	1,	1,289,	—	1,817,	—
So. Amca. and W. Indies	855,	1,598,	1,567,	2,855,	2,670,	3,386,
United States and Cal.	6,954,	537,	2,882,	41,	4,213,	54,
	10,426,	2,136,	5,738,	2,896,	8,700,	3,440,
France	1,071,	1,084,	266,	425,	113,	756,
Hanse Towns, Holl. & Belg.	287,	861,	110,	35,	197,	1,129,
Prtgl., Spain, and Gbrltr.	275,	55,	555,	34,	30,	51,
Mlta., Trky., and Egypt	169,	4,	261,	—	1,	1,
China	—	—	—	—	—	—
West Coast of Africa	55,	8,	53,	11,	47,	8,
All other Countries....	145,	27,	208,	31,	151,	56,
Totals Imported....	12,428,	4,175,	7,191,	3,432,	9,239,	5,441,
Exported to:—						
France	5,428,	525,	1,848,	336,	3,922,	1,013,
Hanse Towns, Holl. & Belg.	857,	538,	229,	1,512,	67,	469,
Prtgl., Spain, and Gbrltr.	63,	105,	781,	—	792,	26,
	6,348,	1,168,	2,858,	1,848,	4,781,	1,508,
Ind. and China (viâ Egypt)................	320,	2,433,	165,	1,024,	1,356,	3,477,
Danish West Indies	—	—	—	—	—	—
United States	83,	—	18,	—	181,	5,
South Africa	5,	—	—	—	58,	3,
Mauritius	—	—	—	—	—	—
Brazil	338,	53,	264,	54,	882,	88,
All other Countries....	262,	113,	225,	40,	321,	77,
Totals Exported....	7,356,	3,767,	3,530,	2,966,	7,579,	5,158,
Excess of *Imports*	5,072,	408,	3,661,	466,	1,660,	283,
" Exports	—	—	—	—	—	—

REVENUE.—(UNITED KINGDOM.)—30TH JUNE, 1866-65-64-63.

Net Produce in YEARS *and* QUARTERS *ended* 30*th* JUNE, 1866-65-64-63.

[000's omitted.]

QUARTERS, ended 30th June.	1866.	1865.	1866.		Corresponding Quarters.	
			Less.	More.	1864.	1863.
	£	£	£	£	£	£
Customs	5,271,	5,178,	—	93,	5,446,	5,857,
Excise	5,144,	4,865,	—	279,	4,864,	4,405,
Stamps	2,483,	2,490,	7,	—	2,539,	2,394,
Taxes	1,478,	1,407,	—	71,	1,432,	1,390,
Post Office	1,070,	970,	—	100,	960,	950,
	15,446,	14,910,	7,	543,	15,241,	14,996,
Property Tax	1,597,	2,210,	613,	—	2,469,	2,918,
	17,043,	17,120,	620,	543,	17,710,	17,914,
Crown Lands	71,	70,	—	1,	69,	68,
Miscellaneous	350,	359,	10,	—	495,	508,
Totals	17,464,	17,549,	630,	544,	18,274,	18,490,
			NET DECR. £85,856			

YEARS, ended 30th June.	1866.	1865.	1866.		Corresponding Years.	
			Less.	More.	1864.	1863.
	£	£	£	£	£	£
Customs	21,369,	22,304,	935,	—	22,821,	24,100,
Excise	20,067,	19,559,	—	508,	18,666,	16,674,
Stamps	9,553,	9,481,	—	72,	9,462,	9,135,
Taxes	3,421,	3,267,	—	154,	3,260	3,183,
Post Office	4,350,	4,110,	—	240,	3,820,	3,750,
	58,760,	58,721,	935,	974,	58,029,	56,842,
Property Tax	5,777,	7,699,	1,922,	—	8,635,	10,713,
	64,537,	66,420,	2,857,	974,	66,664,	67,555,
Crown Lands	321,	311,	—	10,	306,	301,
Miscellaneous	2,868,	2,858,	—	11,	3,023,	2,828,
Totals	67,726,	69,589,	2,857,	995,	69,993,	70,684,
			NET DECR. £1,862,220			

REVENUE.—UNITED KINGDOM.—QUARTER ENDED 30TH JUNE, 1866:—
APPLICATION.

An Account showing the* REVENUE *and other* RECEIPTS *of the* QUARTER *ended* 30*th June,* 1863 ; *the* APPLICATION *of the same, and the Charge of the Consolidated Fund for the said Quarter, together with the Surplus or Deficiency upon such Charge.

Received:—

		£
Surplus Balance beyond the Charge of the *Consolidated Fund* for the Quarter ended 31st March, 1866, viz.:—		
Great Britain	—	
Ireland	£542,705	
		542,705
Income received, as shown in Account I		17,463,664
Amount raised on account of Fortifications, &c., per Act 27th and 28th of Victoria, cap. 109		150,000
Amount received in repayment of Advances for Public Works, &c.		504,721
Ditto, for New Courts of Justice		—
		£18,661,090
Balance, being the Deficiency on 30th June, 1866, upon the charge of the Consolidated Fund in Great Britain, to meet the Dividends and other charges payable in the Quarter to 30th September, 1866, and for which Exchequer Bills (Deficiency) will be issued in that Quarter		3,513,865
		£22,174,955

Paid:—

		£
Amount applied out of the Income in Redemption of Deficiency Bills issued in the Quarter to 30th June, 1866, for the charge of the Consolidated Fund in Great Britain on 31st March, 1866, viz.:—		
Total deficiency	£2,132,764	
Deduct amount redeemed with Sinking Fund	390,000	
		1,742,764
Amount applied out of the Income to *Supply Services*		10,557,992
" advanced for New Courts of Justice		80,000
Charge of the *Consolidated Fund* for the Quarter ended 30th June, 1866, viz.:—		
Interest of the Permanent Debt	£6,225,322	
Terminable Debt	296,945	
Principal of Exchequer Bills	857,700	
Interest of "	51,375	
" Deficiency Bills	—	
The Civil List	101,526	
Other Charges on Consolidated Fund	499,055	
Advances for Public Works, &c.	589,790	
Sinking Fund	334,484	
		8,956,197
Surplus Balance in Ireland beyond the Charge of the Consolidated Fund in Ireland for the Quarter ended 30th June, 1866		838,002
		£22,174,955

BRITISH CORN.—*Gazette Average Prices* (England and Wales), *Second Quarter of* 1866.

[This Table is communicated by the Statistical and Corn Department, Board of Trade.]

Weeks ended on a Saturday, 1866.	Weekly Average. (Per Impl. Quarter.)					
	Wheat.		Barley.		Oats.	
	s.	*d.*	*s.*	*d.*	*s.*	*d.*
April 7	44	9	37	2	24	6
„ 14	44	5	37	–	24	2
„ 21	44	9	37	2	24	8
„ 28	45	5	36	3	24	6
Average for April	44	10	36	11	24	5
May 5	45	9	36	3	25	–
„ 12	45	9	36	4	24	10
„ 19	46	1	36	2	25	2
„ 26	47	4	36	6	25	4
Average for May	46	3	36	4	25	1
June 2	47	5	35	4	25	11
„ 9	47	1	35	9	25	8
„ 16	47	4	36	–	25	9
„ 23	48	5	34	4	26	7
„ 30	51	–	34	–	26	–
Average for June	48	3	35	1	26	–
Average for the quarter	46	6	36	–	25	2

RAILWAYS.—Prices, *April—June;—and* Traffic, *Jan.—June*, 1866.

Total Capital Expended Mlns.	Railway.	For the (£100). Price on			Miles Open.		Total Traffic. first 26 Weeks. (000's omitted.)		Traffic pr. Mile pr. Wk. 26 Weeks.		Dividends per Cent. for Half Years.		
		1st June.	1st May.	4th April.	'66.	'65.	'66.	'65.	'66.	'65.	31 Dec. '65.	30 Jun. '65.	31 Dec. '64.
£					No.	No.	£	£	£	£	*s.* *d.*	*s.* *d.*	*s.* *d.*
53,2	Lond.&N.Westn.	118	121	122	1,274	1,274	2,899,	2,764,	99	94	72 6	60 –	70 –
47,6	Great Western	55	57¾	60	1,292	1,280	1,872,	1,791,	63	60	20 –	20 –	32 6
18,2	„ Northern...	123	123	122½	422	404	929,	890,	88	88	87 6	55 –	87 6
23,5	„ Eastern	38½	40½	40½	709	694	877,	863,	50	52	Nil	10 –	25 –
14,5	Brighton	96	98	96	293	272	524,	493,	81	86	65 –	50 –	60 –
18,6	South-Eastern	71	74	74½	315	308	613,	588,	99	99	45 –	25 –	57 6
16,3	„ Western....	93	93	93½	500	490	—	—	61	61	55 –	45 –	55 –
191,9		85	86¾	87	4,805	4,722	7,714,	7,389,	77	77	49 3	38 –	55 4
26,1	Midland	124	123½	123¾	677	663	1,284,	1,186,	80	73	70 –	65 –	77 –
21,1	Lancsh.and York.	121½	121½	121	403	403	1,151,	1,008,	124	111	62 6	55 –	60 –
14,1	Sheffield and Man.	62	64	64	246	246	526,	465,	93	80	35 –	10 –	25 –
37,1	North-Eastern	109½	110	110	1,208	1,171	1,760,	1,637,	65	63	65 –	55 –	63 –
98,4		104¼	104½	104¾	2,534	2,483	4,721,	4,296,	90	82	58 1	38 9	56 1
14,8	Caledonian	128	129	128	418	408	710,	659,	71	69	75 –	67 6	72 6
5,7	Gt.S.&Wn.Irlnd.	—	—	—	387	387	—	—	28	25	50 –	45 –	45 –
310,8	*Gen. aver.*	95	96	96¼	8,144	8,000	13,145,	12,344,	77	74	54 –	40 11	56 1

Consols.—Money Prices, *4th April*, 86⅝ to ⅝.—*1st May*, 86⅞ to ¼.—*1st June*, 87⅛ to ⅜.

Exchequer Bills.—*4th April*, 9*s.* to 4*s.* dis.—*1st May*, 8*s.* to 3*s.* dis.—*1st June*, 12*s.* to 5*s.* dis.

BANK OF ENGLAND.—WEEKLY RETURN.

Pursuant to the Act 7th and 8th Victoria, c. 32 (1844), for Wednesday in each Week, during the SECOND QUARTER ***(April—June) of* 1866.**

[0,000's omitted.]

1	2	3	4	5	6	7
ISSUE DEPARTMENT.					COLLATERAL COLUMNS.	
Liabilities.		Assets.				
Notes Issued.	DATES. (Wednesdays.)	Government Debt.	Other Securities.	Gold Coin and Bullion.	Notes in Hands of Public. (Col. 1 minus col. 16.)	Minimum Rates of Discount at Bank of England.
£ Mlns.	1866.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	1866. Per ann.
28,48	April 4....	11,01	3,98	13,48	22,33	16 Mar. 6 p.ct.
28,36	„ 11....	11,01	3,98	13,36	22,04	
28,04	„ 18....	11,01	3,98	13,04	22,30	
28,00	„ 25....	11,01	3,98	13,00	22,16	
27,71	May 2....	11,01	3,98	12,71	22,87	4 May 7 „
27,29	„ 9....	11,01	3,98	12,29	22,34	8 „ 8 „
26,85	„ 16....	11,01	3,98	11,85	26,12	11 „ 9 „
26,30	„ 23....	11,01	3,98	11,30	25,47	12 „ 10 „
26,43	„ 30....	11,01	3,98	11,43	26,02	
27,62	June 6....	11,01	3,98	12,62	25,45	
28,69	„ 13....	11,01	3,98	13,69	25,96	
29,17	„ 20....	11,01	3,98	14,17	25,10	
29,17	„ 27....	11,01	3,98	14,17	24,82	

BANKING DEPARTMENT.

8	9	10	11	12	13	14	15	16	17	18
Liabilities.					DATES. (Wdnsdys.)	Assets.				Totals of Liabilities and Assets.
Capital and Rest.		Deposits.		Seven Day and other Bills.		Securities.		Reserve.		
Capital.	Rest.	Public.	Private.			Government.	Other.	Notes.	Gold and Silver Coin.	
£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	1866.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
14,55	3,89	7,69	13,35	,44	April 4	10,91	22,09	6,15	,77	39,93
14,55	3,18	4,06	14,95	,47	„ 11	10,64	19,38	6,32	,87	37,21
14,55	3,19	4,04	13,97	,44	„ 18	10,64	18,98	5,74	,85	36,21
14,55	3,20	4,42	13,29	,43	„ 25	10,69	18,51	5,84	,85	35,89
14,55	3,21	4,92	13,59	,44	May 2	10,69	20,38	4,84	,80	36,71
14,55	3,24	5,78	13,51	,46	„ 9	10,89	20,84	4,95	,86	37,55
14,55	3,43	5,94	18,62	,53	„ 16	10,84	30,94	73	,47	42,98
14,55	3,35	5,99	18,79	,55	„ 23	10,84	31,05	83	,55	43,27
14,55	3,42	6,19	20,47	,54	„ 30	10,86	33,45	41	,44	45,17
14,55	3,43	6,65	20,21	,57	June 6	10,81	31,77	2,17	,66	45,41
14,55	3,46	7,13	20,13	,61	„ 13	11,10	31,27	2,73	,78	45,88
14,55	3,50	7,26	21,17	,58	„ 20	11,15	31,21	4,07	,67	47,10
14,55	3,53	7,96	20,84	,56	„ 27	11,35	30,88	4,35	,87	47,45

CIRCULATION.—COUNTRY BANKS.

Average Amount of Promissory Notes in Circulation in* ENGLAND *and* WALES *on Saturday, in each Week during the* SECOND QUARTER (*April—June*) *of* 1866; *and in* SCOTLAND *and* IRELAND, *at the Three Dates, as under.

ENGLAND AND WALES.				SCOTLAND.				IRELAND.		
DATES.	Private Banks. (Fixed Issues, 4,05).	Joint Stock Banks. (Fixed Issues, 3,22).	TOTAL. (Fixed Issues, 7,27).	Three Weeks, ended	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 2,75).	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 6,35).
1866.	£ Mlns.	£ Mlns.	£ Mlns.	1866.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
April 7	3,00	2,63	5,63							
„ 14	3,02	2,65	5,67							
„ 21	3,00	2,63	5,63							
„ 28	2,98	2,56	5,54	April 28	1,51	2,72	4,23	2,93	3,09	6,02
May 5	2,98	2,59	5,57							
„ 12	2,98	2,58	5,56							
„ 19	2,89	2,52	5,41							
„ 26	2,73	2,41	5,14	May 26	1,64	2,97	4,61	2,90	2,91	5,81
June 2	2,69	2,30	4,99							
„ 9	2,62	2,24	4,86							
„ 16	2,55	2,20	4,75							
„ 23	2,50	2,18	4,68	June 23	1,60	2,95	4,55	2,68	2,63	5,31

FOREIGN EXCHANGES.—*Quotations as under,* LONDON *on Paris, Hamburg & Calcutta; —and New York, Calcutta, Hong Kong & Sydney, on* LONDON*—with collateral cols.*

1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Paris.				Hamburg.				Calcutta.				
DATES.	London on Paris.	Bullion as arbitrated.		Prem. or Dis. on Gold per mille.	London on Hambg.	Bullion as arbitrated.		New York.	India Council	At Calcutta on London.	Hong Kong.	Sydney.	Standard Silver in bars in London.
	3 m. d.	Agnst. Engd.	For Engd.		3 m. d.	Agnst. Engd.	For Engd.	60 d. s.	60 d.s.	6 m. d.	6 m. s.	30 d. s.	pr. oz.
1866.		pr. ct.	pr. ct.			pr. ct.	pr. ct.	pr. ct.	d.	d.	d.	pr. ct.	d.
April 7 ..	25·50	—	·3	½ pm.	13·10	—	—	137	24	26	56½	13½	61⅜
„ 21 ..	·42	·2	—	„	·9½	·2	—	„	23⅞	„	„	„	„ ½
May 5 ..	·45	„	—	„	„	—	—	136⅝	„	„	„	„	„ ¼
„ 19 ..	·50	·3	—	„	·10½	—	—	139¼	„ ¾	25⅛	„	„	62
June 2 ..	·47½	„	—	„	·9½	—	—	143½	„ ½	24⅞	55½	„	„
„ 16 ..	·50	·1	—	par.	·8¾	—	—	154	„	25	„	„	„ ½

Vol. XXIX.] [Part IV.

JOURNAL OF THE STATISTICAL SOCIETY,

DECEMBER, 1866.

OPENING ADDRESS *of the* PRESIDENT *of* SECTION F (ECONOMIC SCIENCE *and* STATISTICS), *of the* BRITISH ASSOCIATION *for the* ADVANCEMENT *of* SCIENCE, *at the* THIRTY-SIXTH MEETING, *at* NOTTINGHAM, *August*, 1866. *By* JAMES E. THOROLD ROGERS, M.A.

THE Presidents of the various Sections among which the scientific labours of the British Association are distributed have, beyond the general conduct of their several departments, the obvious and important duty of dwelling in their introductory address on the progress made during the past year in the special science with which they are for the time being identified. Nor is there ever wanting abundant material on which this congratulatory comment may be made, as scientific research accumulates its observations, and arranges its inferences. The mathematician, the chemist, the physiologist, the geologist, the mechanician, can point with satisfaction to the annual growth of their special sciences, can compare the demonstrations of the present with the hypotheses of the past, and can confidently claim the acknowledged progress which research and method have achieved.

The case, however, is somewhat different with the Section over which I have the honour to preside. We can but rarely claim that we have made any new discoveries in the subject which occupies our attention, for we deal with that which has been constantly matter of anxious thought long before the beginnings of other inductive sciences. Our science is as old as civilization, coeval with the first speculation on the canons of practical and political philosophy. We cannot claim to discover new elements, new forces, new economies, for we are interpreting that one force which affects the co-operation of man in social life; a force whose estimate has occupied the keenest minds since men began the habit of consecutive reflection. We have before us the phænomena of society, and we know that there is a standard, always ideal, but ever the legitimate, the chief object and aim of social practice; we know that there are hindrances to the attainment of such a standard, and in a general way that such a result may be best approximated by the wise balance of liberty and restriction. But the limits of the former and the endurance of the latter are matters of keen and constant debate, of doubt which may well be honest, even when it seems to be interested. We are invariably reminded that by the practice of men our demonstrations are forced to appear in the shape of problems, that our theories are often acknowledged to be indisputable, but are perpetually liable to dispute. No one, I presume, doubted, even when our system of trade was protective, that free exchange was the natural and normal state, however much it was conceived that artificial or political exigencies needed its modification. When our fiscal system, as we know now, was one mass of folly and injustice, the financiers of the age certainly imagined that they were patriotic, never doubted that they were intelligent, always affirmed that they wished to deal honestly with all interests.

But what our science lacks in novelty, what it needs in practical conclusiveness, it makes up in importance and interest. We do not, when we insist on the theoretical exactness of our principles, affect to deny that they are, perhaps must be, modified by certain overruling exigencies, and that the science and philosophy of social life will never exactly square with the habits of mankind. With many persons, the economist will always be a dreamer, the author of an impossible optimism, the dweller in a new Atlantis, in an impracticable Utopia, in a Cloud-cuckoo town of unnatural alliances. Assailing as he constantly does the policy of restriction, he is attacking a fortress of undoubted strength. Striving as he constantly does against a social habit, a political maxim, a fiscal expedient, a commercial trick, he is struggling to undermine a position which becomes untenable at a time its defenders are reduced to acknowledge that its defence is impolitic, though it has hitherto been thought to be judicious; mischievous, though it has seemed to be salutary; destructive, though it has been believed to be expedient; interested, when it was averred to be national. He is constantly labouring to refute men's hasty sympathies by appealing to their deliberate reason.

We cannot then dispute the disadvantage under which economic science labours, when compared with other efforts of research, whose course encounters no obstacle because it clashes with no interest, whose conclusions are accepted graciously because they provoke no prejudice and awaken no fear. But we can on the other hand claim no small victory in this domain of human thought, and congratulate ourselves on a progress, not the less real because it has been resisted, disputed, and won, after many laborious struggles.

In the first place then no science occupies a more eminent position, because none deal with such exalted purposes. Political economy is perpetually contrasting general with special interests, urging men from narrow ends to the broadest aims, teaching the interdependence of men, of races, of nations. The wisdom which has parcelled the earth out for various products, all necessary towards the development of the best civilisation, instructs men also in the fact that as man cannot labour for himself alone, so nations must needs depend on other nations, and be knit together by the strong bands of reciprocal benefit, if they would work out their own highest good. Political economy, as Adam Smith fully recognised, does not discuss the prosperity of a single people, but proposes as its object the discovery of the wealth of *nations*. It has been the privilege of the economist to disprove the fallacy that one people's gain is another people's loss, a delusion which was not too gross to possess the mind of Bacon, as it was the secret of the foreign policy pursued by this country for many centuries, as it has been the chief cause by which national rivalries and antipathies have been developed and sustained.

In the next place, the spheres of the economist and the statesman are rapidly becoming one. Domestic legislation is increasingly interpreted on economical grounds, assailed because at variance with economical axioms, supported because in accordance with economical demonstrations. A statesman would in these days be at once bold and foolish who affected to disdain economical consequences or defy economical laws. Now at least we find all parties, the representatives of all interests, appealing to the congruity of their policy with the truths of political economy. The abolition of the excise duty on malt is argued from one set of economical principles, its retention is vindicated on another. The regulation of the currency is defended on grounds which involved, on the part of those who uphold our existing system, the recognition of certain causes whose regularity was supposed to partake of the strictness of physical science; while those who dispute the wisdom of our monetary laws disparage the universality of the cause, and point to other principles which they assert the legislature has ignorantly violated. But in effect, every course of public policy, every law or custom which deals with or affects the material interests of the community, is in course of being reviewed by the light of economic science. The incidence of taxation, direct or indirect; the tenure of land; the right of settling land; the relations of labour to capital, with the artificial machinery employed to diminish or increase the share which each of these contributories demands from the gross product; the functions of credit, and the power which it possesses over currency, or, conversely, the influence of currency on credit; the interference of government with labour, particularly the labour of the young; and a host of other public questions, are not or cannot hereafter be treated from a sentimental or a politic point of view, but must be discussed in their economical bearings, in their influence on the general well-being of society.

Again, the same influences are being brought to bear on the relations subsisting between this and foreign governments. The ancient habits and instincts of political diplomacy are silently or noisily wearing out or passing away, and a new diplomacy of commerce, assuming for a time the guise of formal treaties, is occupying no small part of the ground once assigned to labours which were called into activity by distrust, and effected their purpose by intrigue. And if, indeed, impolicy and injustice are legitimately open to remonstrance, and there be any defence for interfering either by advice or threats, with the affairs of foreign nations, when their action is relative solely to those topics which once formed the material for diplomatic correspondence; such a course of procedure is just as legitimate when a government is wilfully crippling its own resources, and inflicting wrongs upon the nation whose general interests it is bound to maintain, by a restrictive and minatory commercial policy.

Among the various questions of great economical importance which have been before the public during the past year there are two on which, with your permission, I will make a few brief comments. These are the contingency, at no remote date, of a considerable exhaustion of certain mineral resources in this country and the altered position which England might consequently assume, and the present condition of what is familiarly called the money market. The first of these questions raises a variety of issues, the magnitude of which cannot be over estimated; the second is a crisis unparallelled for its severity and its duration.

Attention has been called by an economist, who has exhibited great research and original thought on a number of subjects, to the relations subsisting between the consumption of British coal and its future supply. Geologists, it appears, are well-nigh agreed as to the extent of the deposits, and as to the depths within which, according to our present and in all probability our future appliances, such deposits can be rendered available. It is further admitted that the source of motive power is heat, and that coal is, for practical purposes, the sole material from which heat can be derived. Should the consumption of coal in this country, it is argued, progress at the same rate as now, the supply will be exhausted at no distant date, and with such an exhaustion there must ensue a cessation of most of those industries which have hitherto characterized us. So energetically was this alarm seconded by one of our most distinguished economists, that a financial operation was proposed, with a view to paliate some of the evils which might be likely to ensue from such an event.

It cannot, of course, be denied that a limited quantity of any natural product, the demand for which is incessant, must ultimately be exhausted. But the real question, it seems, is, when will the scarcity-price operate on consumption, and when it does so operate in what will the saving be effected? That the scarcity-price is not yet operative is manifest from the increase in the aggregate consumption of coal, and from the increased production of metals; for it is in the smelting of metals that the largest consumption occurs. Nor can it be doubted that when the saving becomes necessary from enhanced price the economy will be exercised in this direction. But the total value of all metals produced in this country in the year 1864 (the largest in value, though not the largest in amount, yet recorded), was worth little more than sixteen millions, a great but not a dominant quantity in the annual aggregate of British industry. It would seem, then, that the alarm, if it be not premature, is certainly excessive; that there will be abundant warnings of future scarcity, and necessary economies in dealing with the residue, long before that residue verges to exhaustion.

The material wealth of this country, it may be observed, greatly as it is related to its manufactures, one of the raw materials of which is locally limited, is far more fully derived from its geographical position, and thereupon its trade, the advantages and aids of which are permanent. Occupying, as Great Britain does, the most central position between the New and the Old World, it is and will be, so long as its people are industrious and resolute, the highway and the mart of nations. Its commerce, by virtue of causes which cannot be reft from it, increases at a far more rapid rate than its manufactures; and if that commerce remain unfettered and unshackled there seems no limit to the width which its markets may attain.

It would not become me, in an introductory address, to enter on the vext question of the currency, and in particular to criticize the Act of 1844. Opinions are, as is well known, broadly and sharply divided on that famous measure. The Act, as my hearers are aware, is restrictive. It interferes peremptorily, on grounds, as was asserted by the late Sir Robert Peel, of the highest public expediency, with the freedom of issuing paper credit. It secures the convertibility of a paper currency, not by the circumstances which a bank might be supposed to interpret for itself, by guarding on its own account against the possible risk of seeing its paper dishonoured, but by the rigid yet not unbroken rule of a proportional issue. With some thinkers this system is lauded as one of consummate wisdom; with others it is censured as one of needless and mischievous interference with that part of the machinery of trade which would be self-adjusting without it, and which is not really supported by it. As a rule, indeed, when one set of persons, confessedly competent to form a judgment, decide that a law dealing with commerce is wise and useful, and another set of persons equally competent declare that it is foolish and mischievous, it will generally be found, in course of time, that the latter are in the right. Such was the case with the colonial system, with the corn laws, with the navigation laws, with the sinking fund, with the laws regulating or prohibiting the exportation of coin, with bounties, with export duties, with the favoured nation clause in commercial treaties.

It has been stated, but not I think proved, that the cause of the present crisis has been excessive or over-trading. As far, however, as can yet be discovered, it seems to be due far more to imprudent action on the part of certain banks, who have made advances at long dates, or on securities not readily convertible. The distrust which has followed on the failure of some among these banks has led to the absorption of a large amount of the note currency by the solvent banks, with a view to making their position impregnable. But this retention of notes, as it has limited the amount of accommodation, has indirectly raised the rate of discount, and thus it follows that as long as the rate is high the notes are hoarded, and as long as the notes are hoarded the rate will be high. It is worth the attention of the Section to consider whether the contingency of such a dead-lock as the present may not, concurrently with the restrictions of the Act of 1844, or independently of them, be rendered more frequently imminent by the increased inducements in the shape of high rates of interest offered to the public on deposit accounts.

At all events, the present state of affairs is without parallel. Once, in 1857, the rate of discount touched 9 per cent., just before the relaxation of the Act. It has stood on the present occasion for some weeks at 10; and unless British commerce is now conducted under far more favourable circumstances than it could have been nine years ago, the effect must ultimately be ruinous to the trader—must speedily be followed by a great rise in general prices, and in all probability by a glut of capital at no distant date.

The discussion, however, of purely economical questions forms in effect at least, but generally the most exciting, among the topics laid annually before this Section. Its largest business lies, and will, it may be hoped, constantly lie, in the direction of statistical inquiry.

The statistics published by the various government departments are annually of increasing fulness, of larger importance, of improved method. Their utility cannot be overrated, their value to those who are led to familiarize themselves with these certain and unprejudiced witnesses is of the highest character.

During the past year two papers have been issued, both, I believe, from the Poor Law Board, or at least compiled by means of its machinery, which have had a considerable public interest. I allude to the returns of live stock, and to the statistics of the borough franchises. The first of these is, we understand, to be continued, and to be accompanied by general agricultural statistics.

The origin, as we all know too well, of these returns of live stock is to be found in the incidence of the cattle murrain. The preventive measures employed to check the disease, and the scheme of compensation accorded to those whose cattle were sacrificed in order to save those of other cattle owners, almost necessitated a rough cattle census. Such a census has been taken in other countries for some time past, and, in common with other agricultural statistics, has been regularly supplied for Ireland. It is to be hoped that the prejudice which agriculturists have entertained against the supply of these and similar returns will speedily be obliterated. It may, I presume, be taken for granted that no administration wishes to use these facts for any other purpose than that of general information as to the domestic resources of the nation at large.

The value of agricultural statistics does not lie simply in the aid which they may afford in indicating the probable course of the market, and in saving it from needless fluctuations, but in suggesting what is the probable annual deficiency in supply. Many years have passed since this country grew enough food for its inhabitants. That its prosperity may be uninterrupted, it will be necessary that it should rely increasingly on foreign produce. That its people should be well fed, it is necessary that every facility should be given for the growth and importation of live stock and meat.

The table of statistics giving information of the amount of cattle, sheep, and pigs on the 5th of March, 1866, on the presumption that the returns are accurate, is singularly instructive. In drawing any inference on this subject, we should treat Great Britain separately from Ireland, as the importation of cattle from this part of the United Kingdom is more difficult than it would be from Belgium or France, and nearly as difficult as from Denmark and the Elbe. In round numbers, the population of Great Britain is nearly twenty-four millions.

In one particular only, that of sheep, is Great Britain on a general level with other countries. There is nearly a sheep to every head of population. But of horned cattle there is only one to about every five; of pigs only one to every nine. Were the amount of horned cattle in France proportionate only to that of Great Britain, France would have a little more than six millions, in fact it has rather more than fourteen millions. The same may be said of Austria. In many of the German States the proportion is higher still. In Denmark the cattle are not very much less numerous than the population. In the United States there is rather more than one head to every two of population.

With pigs, as I have stated, Great Britain is very scantily provided. In France and Prussia pigs are one to seven; in Austria one to four and a-half. Taking the whole of Europe the proportion is one to six. In the United States there are more pigs than population.

Had the returns supplied us with information as to poultry, the deficiency would have been still more striking. In the year 1865 this country imported more than 400 millions of eggs, if the hundred of eggs be taken, as it has been from the earliest time, at 120.

I need hardly inform my hearers of the fundamental canon of prices—that when the supply of any necessary of life falls short of the demand, the price rises in a proportion which I may perhaps venture on calling geometrical; that is, the quantity available for sale is worth increasingly more, according to the deficiency, than the normal or natural supply would be. The statistics of the cattle returns supply the key towards interpreting the high price of meat, and we may be sure that the price would be higher than it actually is were it not for those improvements in stock-keeping by which cattle become more available for consumption at earlier dates—improvements which are yearly developed.

This deficiency is not greatly supplemented by importation. Small as the stock of cattle is, the annual importations do not amount to more than one-twentieth of the ordinary stock, while that of sheep is, as a rule, but one-fiftieth. During the present year even these quantities must have undergone a serious diminution. Nor is the import of meat large. The most important item is that of bacon. But even here the largest estimate will not give more than the equivalent of 300,000 pigs. The beef seems to be about equal to the supply of 50,000 oxen.

It is matter of regret that no facts have been collected by which we might compare the present and past supply of live stock in Great Britain. It is of course always dangerous to trust to impressions, or to memory; but I cannot but be convinced that there has been a general and considerable diminution in the amount of live stock in Great Britain for some years past. It is now comparatively seldom that agricultural labourers are able to keep pigs; it is still more rare that they breed poultry. The enormous importation of eggs suggests that the fowls kept in Great Britain are comparatively scanty. But it is probable that the maintenance of insect-eating birds is an important provision in agricultural economy, and that when we find fault with the destruction of small birds, we forget that our practice is dispensing with a still more important means for checking the ravages of insects, as well as for supplying that great deficiency in live stock which seems to characterise our domestic economy. It is possible, too, that the abandonment of much pasture in the northern part of the island to deer forests and grouse moors, has considerably lessened stocks of lean cattle and mountain sheep.

It is a little dangerous to offer any comment on the second important contribution to the statistical information of the present year. Under existing circumstances we must, if we allude to the electoral statistics, remember the caution of the Roman poet:—

> "Incedis per ignes
> Suppositos cineri doloso."

It will be clear, however, that valuable as the blue book is to which I am adverting, and singular as were some of the obvious inferences from its contents, the facts are imperfect and the tabulation still more so. One would have desired to see, along with the figures declaring the value of lands and tenements as estimated for income tax, other similar charges, such as the proportion of assessed taxes, and the amount of the poor rate. It would have been well also had the distribution of the 25 per cent. of "working classes" among the several constituencies been distinctly indicated. Thus, for instance, the persons designated by this name amount to nearly half the constituency at Birkenhead; at not much less in Nottingham; whereas at Birmingham they are taken at less than a fifth, at Bradford considerably under a tenth. Is it possible that the expression "working classes" has been variously interpreted by those who transmitted their reports to the Poor Law Board? But as the returns published in this parliamentary paper are of considerable interest, it may be confidently expected that the facts will be tabulated in a fuller manner hereafter, as they are keenly criticised at present.

The progress of statistical inquiry is not due to the direct action of the government only, great and important as have been the aids which the various public departments have conferred on this branch of social learning. Among the scientific bodies who hold sittings in the metropolis, and issue reports of their meetings and their labours, none is more industrious, more impartial, and more useful than the Statistical Society of London. Its *Journal*, now in the thirty-second year of its existence, contains a mass of exceedingly important monographs and well-digested summaries, and is continually enriched by laborious and thoughtful communications. During the past year, this *Journal* has published more than its customary amount of such statistical facts, as illustrate the social condition of various European nations. There is a special value in information such as that given by my distinguished friend Dr. Farr on the mortality of children, for there cannot I conceive be a better gauge of the moral, the social, and the material progress of a people than a low death-rate among children. The labours of Mr. Welton and Mr. Hyde Clarke have thrown light, the former on the condition of France, a country which asserts a great social and intellectual place, and certainly occupies a commanding political influence; the latter on that of Turkey, the lowest and apparently the most irreclaimable of European communities.

I cannot but feel a lively interest in such inquiries as those which have been undertaken by Mr. Jevons. The interpretation of prices, when the facts are large enough to preclude the influence of exceptionally disturbing causes, is one of the most interesting as well as the most instructive among the whole range of economical investigations. Nothing I believe is more likely to correct those hasty generalizations which have formed peculiar temptations to some of our most distinguished economists than the careful analysis of prices. The illustrious Coryphæus of political economy, Adam Smith, was as laborious in collecting facts as he was subtle in gathering inferences; and I have been constantly struck, in following out certain researches into the history of prices, by the remarkable sagacity with which Smith occasionally anticipated or suggested the facts of social life many centuries ago.

It might be expected that there would be a close conformity between values at very remote periods of social history. The proportion subsisting between the prices of labour and food are, or should be, so close and unvarying, that we may always suspect, in fully settled countries at least, that any marked discrepancy between values at different periods is suggestive of removable evils. For instance, if the price of food is considerably in excess of the average rate of wages, some cause, which may be eliminated or corrected, can almost always be assigned for the phænomenon. I may mention here in illustration of this rule, that during the thirteenth and fourteenth centuries the prices of barley and oats, wheat being taken at 100, are represented by the numbers 73·14 and 42·05, and that within the last ten years the numbers have been 70 and 45·95. Close as this relation is, the slight discrepancy may I think be accounted for by the incidence of the malt tax in the first case, and the great increase in the number of horses kept in the second. Other concurrent causes may, I make no doubt, be detected, but these I think are likely to be the most dominant.

Estimates as to depreciation and exaltation in the value of the precious metals are, however, to be made with extreme caution, because they are liable to many fallacies. Some of us may remember the alarms entertained by M. Chevalier as to consequences likely to be effected on prices by the gold discoveries. It is not I think too much to say that these fears, though natural, were grossly exaggerated. For in order that such inductions should be valid, they should be taken from a very wide area, and many disturbing causes should be accounted for or eliminated. The effects of unfavourable seasons and interrupted importations — it is only twenty years since the country accepted the principles of free trade, several years less than twenty since it has experienced the advantage of that policy—should be recognised in interpreting the money value of the first necessaries of life; while the effects of speculative purchases and forced sales are equally dominant in the price current of its conveniences. To interpret a rise and fall in the value of money (the efflux and influx of which, as a merchantable commodity, is inevitably more free than that of any other article of value) by the money measure of that which is open to a vast variety of influences, must be an operation in which infinite caution is necessary, in order to prevent the inference from becoming wholly untrustworthy or delusive.

On such occasions as those in which the British Association has met in considerable manufacturing towns, the Section over which I have the honour to preside, has generally had the benefit of local trade reports. In so considerable a town as Nottingham, one too which for a long time has been distinguished as the centre of important and special manufactures, the Section may hope to have the advantage of hearing these reports, and obtaining information as to local expenditure and improvement. To such reports it is our practice to give priority in so far as may be consistent with the general convenience of the business before the Section. For the rest, the committee will endeavour to group the papers which are to be read so as to make the discussions of each day as congruous as possible.

NOTE.—The author has been informed of two errors in the foregoing address. The agricultural statistics were collected by the Board of Trade, and not by that of the Poor Law; and it appears that the number of pigs returned does not include those kept by others than farmers, or persons holding and cultivating a minimum amount (under five acres) of land. But even if these had been added, it is certain that the inference would be very little weakened. —J. E. T. R.

On the ECONOMIC CONDITION *of the* HIGHLANDS *of* SCOTLAND.

By HIS GRACE *the* DUKE *of* ARGYLL, K.T.

[Read before the Statistical Society, June, 1866.]

AT the courteous invitation of the Council, I was present here last year when a Paper was read by Professor L. Levi, "On the Economic "Condition of the Highlands and Islands of Scotland." I was enabled, on that occasion, by the kindness of the President, to express to the Society my dissent from the professor's views, and I have now the honour of fulfilling an engagement into which I then entered, to record that dissent in a more definite and formal shape.

It is not my intention, however, to fatigue the Society by any minute criticism on the mere details of Professor Levi's paper. Whether those details are so put together as to give a true picture on the whole, is a question which will best be dealt with by presenting another picture of my own. There are of course a great many facts referred to in the paper which are not open to dispute. That the climate of the Highland counties is a wet one; that the country is a rugged one as regards a large portion of its area; that the proportion of population to the square mile is greatly less dense than in counties where the proportion of mountain is also less; that on Highland mountains the proportion of land under tillage to land under pasture is comparatively small; that on these same mountains, if we wander over them, our chances of meeting a sheep are at all times seven times greater than our chances of meeting a man; all these are statements which are true enough, although I do not see their relevancy to the general argument of the paper. Even as regards the various statistical tables and calculations of the paper, it is not my intention to examine their accuracy, because for the most part they seem to me to be wholly beside the real question at issue. I may mention, however, in passing, that as regards one or two of these tables, it is evident, at a glance, that Professor Levi has been led into some extraordinary mistakes. For example, at p. 379 I find a table which compares the four Highland counties with each other as regards the number of proprietors and the average size of properties in each. It was with infinite surprise I learned for the first time from this table, that there are fewer proprietors in Argyllshire than in the county of Sutherland—272 being assigned to Sutherland, and only 180 to Argyllshire. I thought it had been sufficiently notorious that Sutherland is in the hands of a very small number of proprietors, and very little inquiry would have informed Professor Levi that, as compared with this condition of things, property in Argyllshire is in a multitude of hands. As a matter of fact, the number of Commissioners of Supply for the county of Sutherland, are six in number, the same body in Argyllshire amounts to ninety-eight.

I mention this case, however, chiefly for the purpose of saying that as it forms the subject of an important paragraph in the paper, and is made to bear upon the laws of primogeniture and entail, so extravagant an error has cast complete doubt in my mind over the accuracy of all the statistics of the paper—statistics, however, which I do not doubt were drawn up in entire good faith, and from sources which Professor Levi considered to be trustworthy; but in respect to which he has been unable to correct the most obvious blunders by any personal knowledge of the subject or of the country.

Having said so much, I pass at once from anything approaching to mere criticisms of detail, to state the main question in dispute as clearly and as broadly as I can. I do not wish to bind the professor to particular expressions, but to take the main conclusions of his paper, and to show that they are fundamentally unsound. Even where his facts are correct, they are stated in a false connection. To use a familiar expression, he has "got hold of the stick by the "wrong end," and his general view of the existing condition of the Highlands is extravagantly erroneous.

First, then, Professor Levi represents the Highland counties to be, as compared with the rest of the country, in a stagnant or declining state; "subject to paralysing and deteriorating "influences;" with a "soil neglected," "resources unknown and "unavailable," and "capital quite beyond the reach of their forlorn "inhabitants."

Secondly, he connects their condition next after the permanent effects of climate, mainly with the wilful discouragement of tillage, with clearances, and generally with those changes of management which have accompanied the development of sheep farming in the Highlands.

On both these points my view is precisely the converse. As regards the first, I hold as a matter of fact that no portion of the United Kingdom has made more rapid growth in agricultural improvement during the last one hundred years than the Highland counties. Secondly, I hold that this improvement, and the growing prosperity of the country, is due mainly to those very changes which Professor Levi says are the cause of a supposed decline. Thirdly, I think it can be shown conclusively that the only districts in the Highlands which are still in an unsatisfactory condition are precisely those in which the older system has been clung to and maintained.

No two positions could be more sharply contrasted; the difference is fundamental—so fundamental, that it would almost seem as if there were left no common ground for argument.

I begin, therefore, with an endeavour to ascertain whether any such common ground exists, and if it does not exist in the form in which the argument has hitherto been stated, whether any common ground can be cleared by a better understanding on some first principles which are involved in the discussion.

Now at the very root of all Professor Levi's arguments, and colouring all his views of fact, lies the assumption that the one sufficient test of comparative prosperity or decline in any given country, is to be found in the increase, stationary character, or decrease in the number of its population. I must, on the contrary, lay down the principle, as lying at the very root of my argument, that the mere amount of population, apart from the social and economical condition of that population, is no test of prosperity whatever. The decrease of a population which lived in hovels and fed upon potatoes, and were incapable of producing any surplus from their labour, may be the very first condition of agricultural mprovement.

Again, there can be no judgment formed of the decline or advancement of any country without an inquiry into its past condition. There is no such inquiry in Professor Levi's paper. Thus the very first elements of a question, which is essentially a question of comparison, are wanting in that paper. He pronounces our condition to be stagnant or declining; he does so by presenting a partial and exaggerated view of the evils which still remain, and by avoiding altogether any attempt to appreciate the evils which once existed.

Again, it is tacitly assumed throughout Professor Levi's paper, that value as measured by rent is quite a subordinate element in measuring the prosperity of an agricultural country. In fact it is not only treated as subordinate, but it is excluded altogether. From beginning to end of Professor Levi's paper, there is no attempt to estimate the increase of value. But this is not all. In a speech to the Highland Agricultural Society, at Inverness, I observed upon this omission, and that speech was replied to by Professor Levi in a letter addressed to the "Morning Post." In that letter Professor Levi refers to increased rentals, as measuring only the prosperity of "a few owners of land." I am almost ashamed to be called upon before a scientific society, to point out that this is not language worthy of a scientific question: that increased rent means increased produce and larger exports; that increased produce must be the fruit of better agriculture, of larger capital, of natural aptitudes of soil put to more skilful use; and lastly, that a great increase in rent means a great increase in that surplus produce of labour upon which the increase of the general wealth of the community depends. I do not affirm that upon these grounds an increased rental proves the existence of all the elements we should desire in complete prosperity, but I do affirm that when we can say of an agricultural community that it yields for the consumption of other populations a large and increasing surplus of agricultural produce, and when there is no attempt even to prove a decline in social condition, the presumption is that such a community is itself advancing, as well as becoming more valuable to the communities around it; and the *onus probandi* is thrown entirely upon those who affirm of it that it is in a stagnant or declining state.

What I propose to do in this paper is, first, to say a few words on the condition of the Highlands up to the close of the civil wars; secondly, to notice the period of transition after the close of those wars, the causes and the effects connected with the introduction of sheep farming; thirdly, to give a more accurate picture of the present condition of the country than Professor Levi has supplied.

The genius of Sir Walter Scott has bathed in the light of imperishable romance the doings and the feelings of the old Highland clans. They had the virtues of all rude and warlike races. They were brave and hospitable, and faithful according to their own rough codes of honour. But the condition of the people was what it could not fail to be from the nature of the life they led, and from the nature of the country they inhabited. The land was a land capable of yielding adequate means of support only as a return to industry and skill. The life was a life in which industry was impossible, and in which agricultural skill was unattainable and unknown. The whole condition of society was founded on war as an habitual pursuit; a chief was powerful according to the number of his followers. The land was held and subdivided with a view to their increase up to, and beyond the bare limits of subsistence. There is abundant evidence that they lived in constant scarcity and exposed to frequently recurring seasons of famine. Mr. Cosmo Innes, than whom no man is more competent to speak with authority on the matter, has said of the old inhabitants of the Highlands that "they "were always on the verge of famine, and every few years suffering "the horrors of actual starvation."[*]

In corroboration of this remark, Mr. Innes has communicated to me a fact which throws a curious light on the condition in which the Highlands must have been when the condition even of some of the richest counties in Scotland was one of dependence on the import of grain from foreign countries. In Charles the First's Parliament of 1633, a Bill was brought in "desiring that all impositions for "restraining the inbringing of victual may be discharged, it being "without example in any part of the world, and so much the more "that *the whole sheriffdoms of Dumbarton, Renfrew, Argyll, Ayr, "Wigtown, Nithsdale, steuartry of Kirkcudbright, and Anandale are "not able to entertain themselves in the most plentiful years that ever "fell out without supply from foreign parts.*" Accordingly there is abundant evidence of the constant scarcity and frequent starvation in which the Highland population lived. Some striking illustrations of this are given in Captain Burt's well-known letters written in 1726. Pennant, at a later period in the same century, speaking of Skye, says "the crops are most precarious; the poor are left to "Providence's care. They prowl like other animals along the "shore to pick up limpets and other shellfish, the casual repasts of "hundreds during part of the year in these unhappy islands. "Hundreds thus drag through the season a wretched life, and "numbers unknown in all parts of the Western Highlands fall "beneath the pressure, some of hunger, more of the putrid fever, "the epidemic of the coast, originating from unwholesome food, "the dire effects of necessity. The produce of the crops very "rarely is proportioned in any degree to the wants of the inhabitants: golden seasons have happened when they have had superfluity, but the years of famine are ten to one."

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[*] "Sketches of Early Scottish History," p. 434.

This state of things is not astonishing; the only matter of astonishment is how any considerable population could have lived at all. Let us remember, in the first place, that the food which now for several generations has been the principal food of all poor agricultural populations, was not then available. There were no potatoes. Let us remember, in the second place, that the climate is a wet one, and that drainage was absolutely unknown. Let us remember, in the third place, that although potatoes will grow on damp and even wet soils, barley and oats will not grow except on land which is comparatively dry. Let us remember, in the fourth place, that in a mountainous country, with a wet climate and no artificial drainage, the best land in the bottoms of the valleys must have been very wet, and that even the sides of the hills must in most places have been covered with a boggy and spongy soil. It follows from all these considerations that corn could only be raised on those spots and portions of land which were dry by natural drainage. Sometimes these may have been in the bottoms of the valleys when the soil happened to be light and shingly, but more often they were on the steepest sides of the hills, on the banks of streams, and among the naturally dry and even stony knolls. Accordingly nothing is more common in the Highlands than to see the old marks of the plough upon land so high and so steep, that no farmer in his senses would now consider it as arable at all. When these marks catch the eye of the stranger, full it may be of sentiment or of political economy, or of a confusion of both, he looks upon them and quotes them as the melancholy proofs of ancient and abandoned industry, of the decay of agriculture, in short of a stagnant declining state. Whereas in truth these are the most sure and certain indications of the low and rude condition of agriculture in former times; of the better lands which are now drained and cleared, and ploughed, having been then under swamp and tangled wood. When again we remember that such dry spots and patches of land as were then capable of bearing corn, were used for that purpose year after year; when we remember that there was no such a thing known as a rotation of crops, since turnips and potatoes were wanting; when we consider further, that even the rudiments of a system of manuring land were also unknown, it is impossible to be surprised that the population of the Highlands was exposed to frequent and severe famines, and we may well even wonder how any considerable population was maintained at all.

It is a common but erroneous notion, that the Highlanders, like the inhabitants of other wild countries, had at least an abundant supply of game. But neither was this resource extensively available. The country swarmed with foxes, eagles, hawks, and at an earlier period, with wolves. These animals effectually prevented the breeding of game; even the deer being unprotected, killed out of season, driven about and allowed no rest, were reduced extremely in number, and in the seventeenth century were found only in the remotest fastnesses of the country. So early as 1551 an Act of Parliament set forth that deer, roe, and wild fowl were clean exiled and banished from over persecution.

Indeed the only explanation of this difficulty is to be found in these two facts, first, that the population of the Highlands was never so great as is commonly supposed; secondly, that it was a population inured to hardship and accustomed to a very low scale of living; and thirdly, that such as it was it did not live on its own resources, but habitually eked out its own means of subsistence by preying upon its neighbours. This is the real explanation of the habit so famous in Highland story, of black mail raids upon the low countries of Scotland. Sir Walter Scott, who in all his novels keeps close to the facts of history and of nature, has put into the mouth of Bailie Jarvie, in "Rob Roy," the true explanation of a habit so unpleasant to those who lived within reach of the Grampians: "The military array of this Hieland country, were a' the "men-folk between aughteen and fifty-six brought out that could "bear arms, couldna come weel short of fifty-seven thousand and "five hundred men. Now, sir, it's a sad and awfu' truth, that there "is neither wark, nor the very fashion nor appearance of wark, for "the tae half of thae puir creatures; that is to say, that the "agriculture, the pasturage, the fisheries, and every species of "honest industry about the country, cannot employ the one moiety "of the population, let them work as lazily as they like, and they "do work as if a pleugh or a spade burnt their fingers. Aweel, sir, "this moiety of unemployed bodies, amounting to one hundred "and fifteen thousand souls, whereof there may be twenty-eight "thousand seven hundred able-bodied gillies fit to bear arms, and "that do bear arms, and will touch or look at nae honest means of "livelihood even if they could get it—which, lack-a-day! they "cannot. . . . . And mair especially, mony hundreds o' "them come down to the borders of the low country, where there's "gear to grip, and live by stealing, reiving, lifting cows, and the "like depredations—a thing deplorable in any Christian country!— "the mair especially that they take pride in it," &c., &c.

My attention was called last autumn by an unknown correspondent, to a very curious and interesting document in the British Museum, which contains much valuable information on the condition of the Highlands immediately after the Rebellion of 1745. It is No. 104 in "the King's Collection," and is the account of an eyewitness, a gentleman who travelled all over the Highland counties, and communicated the result to a friend in London. It is very probable that he was an agent of the Government. He is mainly occupied in noting the military condition and strength of the clans, their politics and their character; but incidentally it gives us some valuable facts also touching the economic condition of the people. Thus in speaking of the district of Lochaber, he gives the following account of the small tenants who held under the tacksmen or leaseholders. "Each of these has some very poor people under him, "perhaps four or six on a farm, to whom he lets out the skirts "of his possession. These people are generally the soberest and "honestest of the whole. Their food all summer is milk and whey "mixed together without any bread; the little butter or cheese they "are able to make, is reserved for winter provision; they sleep away "the greater part of the summer, and when the little barley they "sow becomes ripe, the women pull it as they do flax, and dry it on "a large wicker machine over the fire, then burn the straw and "grind the corn upon quearns or hand mills. In the end of harvest "and during the winter, they have some flesh, butter, and cheese, "with great scarcity of bread. All their business is to take care of "the few cattle they have. In spring, which is the only season in "which they work, their whole food is bread and gruel, without so "much as salt to season it."

No mention is made here of another source of food which, however, it is well known was a constant and habitual resource to the people of the Highlands, viz., the bleeding of live cattle and the mixing of the blood with meal. It is quite obvious how this practice should arise in a country where the people were constantly struggling with scarcity. But it is a curious circumstance that like other customs originating in necessity, it gathered round it for its support reasons and opinions which are still sometimes given as the true explanation of its origin. It came to be considered as beneficial, not only to the men who consumed the blood, but to the poor beasts who afforded it; and there is ground for believing that on the strength of this notion the practice did actually linger on in the Highlands after it had ceased to be a necessity for the support of life. I have met with many Highlanders of middle age, who recollect their fathers speaking of it as a custom general in their own younger days. Under such habits of life, and such conditions of husbandry, it is impossible that the Highland counties can ever have been thickly peopled. It is very difficult, however, to arrive at any even approximate estimate of the population before the close of the civil wars. The most definite information I have seen is that given in the MS. already referred to. It will surprise many to be told that the greatest number of men in arms against the Government in the Great Rebellion of 1745, from the beginning to the end of that rebellion, did not exceed 11,000 men. In the same paper an estimate is given of the number of men in arms which each clan could turn out, and the comparative smallness of that number, even in the case of the most powerful clans, is remarkable. It is specially mentioned, not only that Argyllshire was then the most fertile of the Highland counties, but that ever since the Union the proprietors of land there "had made very great improvements, "whence it came that they were all in easy circumstances." The Campbells, including both the Argyll and Breadalbane branches, are put down as able to turn out 3,000 men, besides leaving at home enough to carry on the usual cultivation of the soil. The Gordons had at one time been able to produce an equal number, but were then much reduced. But when we come to the western and northern clans, the numbers are comparatively small.

The Stuarts of Apine could bring 300 "good" men into the field.

The Camerons from first to last, during the Rebellion of 1745, brought into the field over 900 effective men, of which number they lost above 400.

Keppoch, of Lochaber, "joined the rebels with 300 stout "fellows, all Popish."

Glengarry could raise "about 500 strong fierce fellows."

Lord Lovat could have raised 900 men, "a third part of which "were extremely bad."

McPherson of Cluny, 400.

The Farquharsons of Invercauld, 400.

Rose of Kilravock, 300.

The clan of the Grants, of Strathspey, consisted of "about 1,000 "good men."

The Gordons "who one hundred and fifty years ago could have "brought of their vassals and tenants 3,000 men into the field, are "now so greatly degenerated that all the Highland clans despise "them."

"The Duke of Argyll and his clan, including Breadalbin, can "raise 3,000 men, and leave enough at home for cultivating the land "and other necessary uses; and if the Campbels were to raise their "men as the Camerons and McDonalds, they could bring together "above 10,000 able to bear arms."

It is specially mentioned in the King's MS., that the McLeods of Skye, who were zealous royalists, had lost in the civil wars, and especially at Worcester, so many men that, by the general consent of all the northern clans, it was agreed they should have a respite from war till their numbers should increase.

Such having been the condition of the Highland population about the close of the civil wars and at the termination of the last rebellion, it remains to inquire what progress they had made during the period of peace and of comparative prosperity which occupied the remainder of the eighteenth century. There were three great causes which during that period were brought into operation upon the condition of the people. First, there was the natural effect of a settled Government, the saving of life from the cessation of civil war, feuds, and broils; secondly, there was the saving of life, not less important, from the introduction of inoculation for small-pox; and thirdly, there was the first introduction of potatoes as a new and most abundant means of subsistence. Potatoes were first introduced in the island of South Uist so early as 1743, by Clanranald, from Ireland. Their use seems to have been violently resisted at first by the inhabitants; and we are told that they did not reach the next island of Berna till 1752, whilst in the course of another ten years they had come to support the whole inhabitants for at least one-quarter of the year. Once established, their use soon spread over the Highlands, and their effect in promoting the increase of population must have been as powerful as it has elsewhere been. Inoculation was introduced into the Highlands in 1763, and as it appears never to have encountered the same hostile prejudices which existed in other parts of the country, and as the people generally are described as having accepted the new discovery "with devout thank-

"fulness,"* this also must have tended powerfully in the same direction.

As the Malthusian law is universal, that it is the tendency of population to press upon the limits of subsistence, it cannot be doubted that with the removal of so many checks upon their increase, the people of the Highlands must have multiplied rapidly during the latter half of the eighteenth century. The truth is they did multiply, not only up to, but far beyond the limits of their subsistence, and hence arose that great stream of emigration which has been the theme of so much natural but ill-informed complaint. It has never yet, I think, been pointed out with sufficient clearness or prominence, that the immense emigration of the Highlanders arose out of an extravagant rate of increase during and before the period in which that emigration began. It will surprise, I think, many who suppose that no such emigration could be supported without a complete depopulation of the country, to be told that for many years during the period I refer to, the rate of increase in the Highlands was more rapid than that of the most thriving cities at the present moment. It can be proved beyond all reach of doubt, that if we except the introduction of the potato, there was no corresponding increase in the produce of the soil—no advance in husbandry to support in even tolerable comfort the advance in numbers. And it is a curious circumstance that the very writers who deplore most loudly the emigration, or what they call the subsequent depopulation of the Highlands, are the same writers who supply us with the most conclusive evidence as to the facts which prove that emigration to have been nothing but the natural and legitimate results of great natural economic laws.

I will take two remarkable examples.

There was published in 1804 a poem by a certain Mr. Alexander Campbell, the title of which was "The Grampians Desolate." I cannot say much for the merit of it in a poetical point of view, but the notes and appendices which are added to illustrate the subject of the poem, contain much valuable information and evidence on the causes of the depopulation which the poet deplores. In one of these notes he gives a narrative, from personal knowledge, of transactions connected with certain farms in Lochaber, which exhibit to us in the clearest light both the old state of things, the period of transition, and the effect of the new husbandry upon the general condition of the country. Mr. Campbell then, it appears, held along with another member of his family, his son-in-law, a Captain McDowell, certain large farms on the Gordon estate; they were, as they always must be from the nature of the country, chiefly grazings, and the stock was sheep and black cattle. But the lower parts of the holding, including four separate farms, were sublet on the old Highland system, among no less than thirty-eight families. These families were allowed to have summer grazings on the hills adjoining the pastures of the tacksman. Mr. Campbell took the management in 1794, and the following is the account he gives of the husbandry of these people. "Although the lands were let remarkably "low, yet the mode of farming was wretched in the extreme, con-"sequently the farmers were very poor, and the payment of their "rents a thing next to impossible. Their infield and outfield "patches of arable land were yearly scratched with a thing some-"what shaped like a plough; the seed scattered on the surface, and "harrowed in with a few sticks pinned together with wooden pins "(the teeth also made of wood); and things were left in this state "till the beginning of autumn, when the women, children, and "herdsmen returned from the summer pastures among the hills—to "reap—what?—little more, perhaps, than a scanty crop of straw, "with as much corn, when threshed, as was scarcely equal to the "quantity sown a few months before, and sometimes, indeed, not "quite so much! Their houses, according to the fashion of their "forefathers, were built of turf, usually cut from the best sward "of the whole farm, being the firmest, consequently the best for "that purpose. The farmers, if they deserved that title, saved little "or no manure for dressing their lands; but when they required "any dung for potatoes or barley—down with one end of the house, "which having been well smoked, was most excellent manure, and "near at hand for the exigency of the moment! Nay, will it be "believed? the vigilant, industrious farmer, his guidwife, and bairns "would occupy one end of the house while the other was being "pulled down for the purpose above stated, till Fear-an-tigh (the "guidman) should find sufficient leisure to cut turf from the best "spot on the whole farm and build a new house."

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* "Walker," vol. ii, p. 354.

Meanwhile the price of sheep and cattle was rising. Every year was establishing more firmly the great value of the Highland grazings to those who had capital to stock them. In 1799, the term of the lease or tack was drawing to a close, Captain McDowell applied to the Duke of Gordon for a renewed lease, founding his claim on the old feudal connection of his family with the duke's. The duke responded to the plea, but informed Captain McDowell that he had been offered *four times* the rent at which the lands were then held, and added that on account of the old connection, he was willing to sacrifice one-fourth of the market value of his lands, and relet the farm at three-fourths of the rent he had been offered by others. Captain McDowell was a soldier, entirely ignorant of rural affairs, and he doubted whether he could pay the rent, even at one-fourth less than a regularly trained farmer was willing to pay. Mr. Campbell, however, persuaded him to accept it. He had, partly by compulsion and partly by persuasion, done something to improve the rude and ignorant husbandry of the subtenants; he had also raised their rents, and he had now a scheme of converting the subtenants into a sort of joint-stock concern, and thus of keeping them in the country. Mr. Campbell is very proud of the result he attained, and what was it? He says that after paying rent, interest on stock, and expenses, he finds that each subtenant, aided by a constantly advancing price of cattle, did actually, on an average, realise a profit of between 3*l.* and 4*l.* a-year, which enabled him to educate and clothe his children and live decently suitable to his humble condition. That is to say, that at the sacrifice of one-fourth of the produce of the land, these subtenants were able to realise in twelve months about as much as an able-bodied navvy can now earn with certainty in little more than three weeks. Now I do not blame the Duke of Gordon for having given a great farm to a tacksman wholly ignorant of farming, at the sacrifice to himself of one-fourth of the value of his land, and at the sacrifice to the community of one-fourth of the produce which that land was capable of yielding. Such concessions to demands founded on old ties, and to conditions of society which are in course of change, are concessions which all Highland proprietors have frequently been called to make. Neither do I blame the tacksmen for having tried in like manner to retain upon their farms thirty-eight families, when probably less than half that number was more than could occupy the land with profit to themselves or with advantage to the country. But I do object to these results being regarded as in themselves desirable, or as economically the best that could be desired. And when in the gradual progress of time and of events both the land and the men are turned to better use, and a large amount of produce is obtained by less labour more skilfully applied, I object to this result being described before a scientific society as the proof of a stagnant and declining state.

Again, I pass to another author of much the same date, but one who wrote, not as a poet, but as a man of science. In 1808 an interesting and important work on the "History and Condition of "the Highlands and Islands," was published in Edinburgh by a Dr. John Walker, who had been Professor of Natural History in the University of Edinburgh. In the concluding chapter he refers to the emigration of the people, and looking at it in a general and theoretical point of view, he regards it as likely to be excessive, and therefore as an evil to be deplored, and if possible to be checked. Yet I know no work which proves more clearly than his that that emigration arose out of the necessities of the case,—that it was the one indispensable preliminary step towards an improved condition, and a more skilful agriculture.

In the first place he shows that there had been a great and rapid increase of population immediately consequent on the establishment of settled law and order in the Highlands. In the second place he shows that there was no corresponding increase in the means of subsistence arising out of any improvement in the system of agriculture. In the third place he shows that this increase was such, that after supplying a continuous stream of emigration for many years, and after supplying also the British army with a large number of men for its continental and colonial wars, it still left every farm encumbered with a population for whose labour there was no room, and for which, therefore, there was no employment. Fourthly, he shows that the first step towards a better agriculture was, that there should be a more definite separation between the class of farmers and the class of labourers, and consequently a large diminution of the number of tenants. And lastly, he lays down the great economic rule, as not less applicable to agriculture than to every other productive industry, that the object to be attained is increased amount of produce from a diminished amount of labour.

I shall now indicate to the Society some of the evidence furnished by Dr. Walker on each of these points.

First as regards the increase of population consequent on a settled Government, Dr. Walker gives a table showing that increase in a great number of parishes, stretching for 300 miles from Cantire to Cape Wrath.

Twenty-two parishes in the Hebrides, north of Cantire, contained of inhabitants,—

In the year 1750, or soon before it, 36,067.

In the year 1755, by Dr. Webster's list, 37,126.

By an exact enumeration taken in the country, anno 1764, 42,574.

By the statistical accounts between the years 1791 and 1795, 53,236.

The five parishes in the Hebrides, south of Cantire, comprehending Bute, Arran, and Cumbrays, contained,

In the year 1750, or soon before it, 7,134.

In the year 1755, by Dr. Webster's list, 8,384.

By an exact account taken in the year 1771, 9,331.

By the statistical accounts between the years 1791 and 1795, 11,072.

Twenty-four parishes on the mainland, north of Cantire, and chiefly on the coast, contained,

In the year 1750, or soon before it, 34,298.

In the year 1755, by Dr. Webster's list, 34,536.

By a particular account taken in the country in the year 1764, 37,772.

By the statistical accounts between the years 1791 and 1795, 43,568.

Observations.

"1. These last twenty-four parishes form a chain on the west " coast of Scotland, near 300 miles in length. It appears that the " inhabitants of this tract increased about 3,000 in number between " the years 1755 and 1764. The real increase, however, was much " greater; for, beside the usual emigrants, the seven years' war " intervened between these years, during which time these twenty-" four parishes were drained of men for the land and sea service.

"2. It appears also that the people of this district have increased " about 6,000 in number from the year 1764 to the year 1795; but " this is far from being the real amount of its population, for during " that term of years great numbers of the inhabitants have been " drawn off to the American and the present war; and a great part " of the people who have emigrated to America since 1771, were " from these parishes.

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"4. In general the above fifty-one parishes in the Hebrides and " West Highlands, contain at present 107,876 inhabitants, which is " probably a greater number than ever subsisted in them before.

"Their increasing population from the year 1755, and especially " since the year 1764, is remarkable and fully ascertained. Notwithstanding repeated wars and frequent emigrations, the number " of people in those distant parts has continued to increase, greatly " to the national advantage.

"5. Such an overflowing population where there is not full " employment for the people, must induce many of them to leave " the country."

On the second point—the wretched and unimproved state of agriculture in the Highlands, when Dr. Walker wrote in 1808, he gave the most clear and specific evidence;—

Infield and Outfield.

"The division of a farm into infield and outfield, was the ancient " and universal custom in Scotland, and still subsists not only over " all the Highlands, but in most parts of the kingdom, and yet every " proper plan of agriculture requires that it should be universally " abolished. It has accordingly been laid aside in all those parts " of the country where husbandry is best understood.

"The infield is, in general, a piece of land that is naturally good; " the farm-house always stands upon it, and this seems to have

" determined the situation of all the old farm-houses in Scotland. " It receives all the manure that the farm affords. It is usually " distributed into three divisions, or kevels as they are called; each " of these is manured over in three years, and for this it must pro- " duce a crop of beans and two crops of oats. These crops are " usually but of a very middling sort, and by no means equivalent to " the manure and labour that is bestowed upon them. Sometimes " there is a fourth division, which is suffered to remain by, or is used " for potatoes; but in general the infield is kept constantly in tillage " and white crops.

" The outfield again, though all arable, is regarded as a waste. " When the infield, or croft land, is worth 20*s.* or 30*s.*, the outfield " will not be worth above 2*s.* or 3*s.* an acre. It never receives any " manure, except a small part which has the cattle folded upon it in " summer. It yields grass of the poorest quality; and when it has " remained by from four to seven years, and is overrun with mosses, " it is ploughed for three crops of oats. No land should be laboured " by the plough for oats, unless it afford an increase of fivefold; but " it is well known that these outfield lands do not yield near so " much; they seldom yield four, and frequently not even three " seeds. It is plain, therefore, that they should be cultivated in " some other manner. This is a scene of husbandry that is really " deplorable, especially as it is carried on by a sensible, frugal, and " laborious set of people; but unfortunately they have no know- " ledge of anything better. To change their practice they want " only proper instruction and proper example."

I now pass to the third point, viz., the excess of population on Highland farms when Dr. Walker wrote, after all the emigration and other methods of depopulation, to which he refers as having been then long in operation. He says:—

" Any person acquainted with the state of husbandry in other " parts of Scotland, must at once be surprised at the great number " of servants retained upon a Highland farm. Many farms in the " south of Scotland are exactly similar to many in the Highlands; " consisting of hill grounds, with a stock of black cattle or sheep, " and a certain portion of arable land. Yet upon a farm of this " kind in the north, you will find more than double the number of " servants that are kept upon a farm of the same rent in the south " of Scotland. In the south the power of labour is adapted, and " sometimes too narrowly adapted, to the size of the possession, " whether large or small. But in the Highlands the number of men " and horses upon a farm are often found equal to what they are " upon another farm much larger, both in rental and in extent.

" A superfluous number of servants and horses must be a heavy " load both upon the landlord and tenant. It is not to be supposed

" that the farmers in the Highlands subject themselves to this " burden from choice, whatever they may do from the prevalence of " custom; but there are circumstances in the present situation of " the country that naturally lead to the present practice.

"'In most places three men are required to attend an ill-con- " structed plough; one to hold it, another to drive four horses " abreast, and a third to follow with a spade to rectify the imperfec- " tion of the tilth. Beside these where the reestle is used to precede " the plough, one man is employed to hold it, and another to drive " one or two horses. By this awkward management, five men and " five or six horses are required for a feeble plough. Thus by the " want of proper instruments of husbandry, the number of men " servants and horses is rendered much greater than is necessary.

" The want of day labourers also oblige the farmer to keep more " men servants than what he constantly requires, but whose labour " at particular seasons is necessary. On a grazing farm the manage- " ment of the milk makes a considerable article, and this, with the " labour of procuring peats in summer, calls for a number of hands. " These causes, with the low wages of the servants, their easy main- " tenance, and the established custom of the country, all conspire to " render the number of servants upon a Highland farm far larger " than anywhere else.

" A man who rents 5*l.* a-year, will be found to keep six horses. " On a farm of 20*l.* a-year, you will find twelve or fourteen men " and women servants. Even when every allowance is made for the " situation of the country, there certainly must be something wrong " in this economy. Mr. McAulay, Minister of Ardnamurchan, who " possessed a stellbow farm of 100*l.* rent, executed all the cultivation " upon it with four men servants, which employed eight when this " farm was in the possession of a country tenant. Notwithstanding " all the circumstances mentioned above, it is probable that there " are few farms in the Highlands which might not be equally well " cultivated with one-third, and some with one-half fewer men " servants and horses than what are used at present."

On the same point, Pennant says, when speaking of Skye, " a " tacksman of 50*l.* a-year often keeps twenty servants, the laziest " of creatures, for not one will do the least thing that does not " belong to his department.

" This number of servants seemed to answer the retainers in " great families, before that pernicious custom was abolished by " Henry VII. The cause is now no more, but the habit can't be ' suddenly shaken off."

On the fourth point, which is a question both of fact and of principle, viz., the necessity, as a first step to improvement, of a more definite division of employment and of labour, so that farmers shall be farmers and labourers should be labourers,—Dr. Walker lays down the sound principle with reference not only to theory, but with reference to the experience of all other portions of the country where an improved agriculture had been established. He says that "the improvement of Britain has been accomplished by "servants hired upon wages in money or in grain, not by people "who were also employed in the cultivation of land on their own "account. It is therefore to be wished that the same practice "should take place in the Highlands; that all farm servants should "be bound to their master's work without any other avocation, and "that all persons who possess land should have their whole labour "secured to them without any infringement."

Lastly, Dr. Walker introduces his remarks on these portions with the enunciation of this economic principle: "It is a great "object in agriculture to execute the work that is required with the "least power and at the least expense."

It will be observed from the quotations I have made from Dr. Walker's work, that emigration from the Highlands had not only begun, but had become so considerable as to attract attention long before sheep farming on a large scale had been introduced, and long before it became generally prevalent in the Highlands. It is not less remarkable, as indicating one of the most deeply seated causes of that emigration, that, contrary to the general notion, it began not with the poorer but with the upper classes—with the military retainers—the gentlemen tacksmen, who under the old system were in fact a class of middlemen between the proprietor and the smaller tenants. They were generally men more skilled in arms than in agriculture. When a great rise in the value of cattle took place, and the proprietors desiring to share in the increased value of the produce of their estates, very generally raised their rents, these tacksmen of the old class found their position changed. They were accustomed to a rude abundance, to rents paid in kind, and to these rents being largely furnished to them out of the holdings of their subtenants. But on the one hand, they had now become accustomed, in the ranks of the British army, to a higher style of living; and on the other hand they found an increasing difficulty in giving for their lands such rents as a class of professional farmers were found ready to give, even in the rude and unimproved state of stock farming which then existed. Hence the first movement of emigration came from the gentlemen tacksmen. It was followed gradually, but continuously, by the emigration of that numerous class, yearly becoming more numerous from feeding and breeding on potatoes, whose labour was not only useless, but an encumbrance in the progress of agricultural improvement.

I now pass to another point of great importance in estimating the nature of the change which has made the Highland counties so largely dependent on sheep grazing. It is indeed a strange inversion of the truth to interpret this change as an indication of a stagnant or declining state, to connect it, directly or indirectly, with a backward movement as compared with other more thriving parts of Scotland. The fact is, that this change had already been accomplished in other parts of Scotland long before, and upon that change their prosperity had been founded. It will be remembered that Professor Walker remarks that many other parts of Scotland resembled the Highlands in physical geography and in the nature of the soil, the farms being largely composed of moorland or mountain pasture, with a comparatively small extent of arable land. But in those other parts, especially on what might be called the Border Highlands, sheep farming on a large scale had been long established. In the middle ages, the great middlemen of the border counties are known to have possessed flocks of sheep as numerous as those now possessed by the largest graziers. It was the ignorance and barbarism of the Highlands alone which had prevented a similar system of agriculture being adopted there. There never was a country in the world in respect to which nature has pointed out more clearly the agricultural use to which it is specially adapted. Wild and rugged as it is, a great portion of its mountain ranges are placed under a mild and moist climate, most favourable to the growth of natural pasture. Except upon the highest summits, and some of the midland masses, snow lies seldom, and never for any long time together. Along the whole extent of the western coast, mountains of great elevation are covered to the very top with a rich and luxuriant vegetation; and even those peaks and ranges which are largely occupied by rocks and stones, have a fine though scanty herbage of their own. It is impossible to describe to those who have not seen it, the beauty and exuberance of the mountain pastures in the fulness of the year. They always remind me of the expression in the Psalms, "Thy paths drop fatness."

Now, what use was made under the old Highland system of these abundant treasures of their soil and climate? Of the very best parts of it they made, as we have seen, but a poor and scanty use; and of by far the largest part of the whole area of their country they made literally no use whatever. Black cattle and a few goats were the only stock in the country. Every one knows that cattle will not ascend to the higher ranges, and they are incapable of climbing among the rocks to reach the innumerable small and broken but rich fields of pasture which are scattered among them. Let us hear what Dr. Walker says of the actual practice pursued in the Highlands at the time he wrote, as regards the use made of the upland pastures:—

"In most Highland farms there is a small portion of arable "ground and a large extent of mountain pasture considerably "distant. The homestead is on the arable land, and generally "situated on the seashore, by the side of a lake or river, or low in a "valley. Here the farmer with his cottagers live in what are called "their winter houses. Soon after the middle of June, when the "arable land is sown, they emigrate from these dwellings with their "cattle to a mountainous place belonging to the farm. Here they "quickly erect or repair their summer houses or sheilings, which "are composed entirely of sods and the branches of trees. In these "dwellings they live during the summer; their only occupation is "tending the cattle on the heights, and the manufacture of the "butter and cheese. Their chief sustenance is oat or barley meal, "with milk in its different forms. In this way they pass the fine "season in a pastoral and cheerful manner of life, of which the "people are extremely fond. When the corn begins to ripen, about "the middle of August, they leave their pleasant summer residence "and return to their winter houses. This method of management "is natural to the situation of the country, and is not peculiar to "the Highlands. The same prevails in other parts of the world, and "especially in Switzerland: there the inhabitants live and labour in "the valleys for the greatest part of the year, among their own "cornfields and vineyards; but during the height of the summer "they enjoy what is called the Alpinage. They ascend the Alps to "considerable heights, and live with their flocks in the same way, "though in a preferable situation, with the inhabitants of the High- "lands.

"By far the greatest part of the pasture in the Highlands is "situated at great heights, and much of it in places inaccessible to "cattle from October till May. Yet upon these heights, and even "upon the summits of very high mountains, there is in the summer "time a profusion of excellent herbage. To these places the cattle "do not willingly repair but in the finest season, and will even "desert them in summer on the approach of wind or rain; for in "rigorous weather they are at all times more covetous of shelter "than pasture. These high pastures cannot be fully applied to use, "or be consumed, but by means of diligent herding. By the neglect "of this the greatest part of them goes to waste. They are not "sufficiently eaten up during summer, and no cattle are kept upon "them after the end of August. In consequence of this a rank and "excellent forage is everywhere to be seen at these great heights "in September and October, which is entirely lost. All this might "be avoided and much gained, if the cattle were confined to these "high pastures by careful herding, which they might very well be till "the end of October. The forage in the low grounds would then be

" spared during the whole autumn, and become highly serviceable " in winter when it is most required.

" *Herding.*

" The above art is well understood and carefully practised by the " storemasters of the south in the pasturage of sheep. The flocks " are attentively herded from morning till evening. They are not " suffered to stray at large, but are directed by the shepherd in their " walk during the day, and to their resting-place at night. They are " conducted to the pasture proper for them at the different seasons, " and in such a manner that the whole herbage upon the farm is " rendered useful. This practice of the south country herds is " known to many people in the Highlands, and they ought to observe " it carefully in the management of their sheep. But to observe it " in the management of their black cattle is a matter of still greater " moment. Yet in this article they are in most places inexcusably " inattentive. The cattle are not properly herded, nor directed to " their pasture with sufficient care; they are allowed to roam at " large over the whole farm; they are suffered to pick and choose " their own pasture, which can never turn out either to the advantage " of the farmer or to the benefit of the stock at large. The grass at " great heights is neglected, and left to decay and wither in the winds. " The coarser grasses in the lower parts, to which the cattle ought to " be confined during summer, are avoided, and in a great measure " lost. The spots of fine grass which should be their relief early in " spring and late in autumn, are perpetually eaten to the ground. " In this matter there is no dependence to be had on the instinct of " cattle, for they would rather have a mouthful of such fine grass " than a bellyful of grasses of a coarser kind. To consume the coarse " pasture upon a farm at the proper season, they must be compelled " by careful herding. It is only in this way that the whole pasture " upon a Highland farm can be turned to its full account.

" The farm servants in the Highlands are not accustomed to that " regular and assiduous herding of cattle that is necessary in a " pastoral country. They look after them only by fits and starts, and " without a due regard either to the nature of their food, or of the " grounds which they ought to occupy. The servants employed are " not even clothed for the purpose. Hardy as they are, a tartan " jacket, a kilt, and brogues that take in and give out the water as it " comes, cannot afford sufficient shelter to a man who is to remain " the whole day abroad in cold winds, rain, and snow. In the mountainous parts of the south of Scotland, and in as severe situations " as any in the Highlands, the herds are clothed in a different " manner. Besides an under waistcoat, they have clothes of warm " coarse cloth, warm stockings of a double thread, strong thick "shoes, and a large thick plaid to cover them entirely upon every "emergency. Thus clothed they can continue all day in the most "boisterous weather, and remain abroad, as they often do, in the "most tempestuous nights; but without such raiment they could "neither pursue their business nor do justice to their masters."

Under these conditions of agriculture, it is not too much to say that more than one-half, probably it would be more correct to say that more than three-fourths of the total meat-producing acreage of the country was entirely and absolutely lost, and that the conversion of the mountains into sheep grazings was as much a reclamation of waste lands as if the whole of that vast area had been for the first time reclaimed from the sea. Sheep are wonderfully adapted for the complete consumption of all available pastures. They climb everywhere, and are never so healthy and strong as when they have wide and steep ranges as their feeding ground. Accordingly the moment their adaptability to the Highlands was established, they spread rapidly over the whole of it. The increase of value consequent on this husbandry, has been enormous; and, notwithstanding Professor Levi's objection, I must indicate to the Society what has been this increased contribution of the Highlands to the national wealth, by representing it in the figures of rental. Thus, I am told of one estate which at the beginning of this century was offered under lease at 400*l.* a-year, and is now worth 10,000*l.* a-year; that is, the rise has been in the proportion of 100 to 4. I know cases myself where, even within the last twenty-two years, the rise has been from 200*l.* to 1,100*l.*

Pennant gives some data which enable us to estimate the value of the cattle exported (1772) from the large parish of Gairloch in West Ross at about 1,260*l.* I am informed by the proprietor that the value of its exports now is upwards of 13,000*l.* In this case there has been also a great increase of population; his estimate was 2,800; the census of 1861 gave 5,438.

Of the next parish of Loch Broom, Pennant says that as in most of the other lochs, only a very few of the natives possessed boats. Now I am informed almost the whole population have nets and shares in boats for the herring fishery.

The truth is, that the diminution of a population purely agricultural, so far from being a phenomenon affecting the Highlands only, is but one example of the effects of a great general law, which has been operating and is now operating over the richest and most highly civilized countries in the world. To increase produce, and at the same time to economise labour, is the double object and the invariable result of every improvement in the arts. The art of agriculture is no exception; in it, as in all others, the advance of knowledge and of skill dispenses with a large share of the labour of human hands. This, at least, is the result of one stage, and that a most important one, in the progress of agriculture;—a population numerous, but accustomed to, and contented with a low standard of living for themselves, and yielding no surplus for the support of others, gives place to a population smaller in amount, but enjoying a higher civilization, and contributing in a corresponding degree to the general progress of the world. Thus it is that the richest and most productive parts of our own country are comparatively the most thinly peopled. The splendid agriculture of the Lothians and of Berwickshire, exhibits miles of country in the highest condition of cultivation, with a singular paucity of human habitations. The same result appears in those counties of England where agriculture is equally advanced. Nor is the fact of a stationary or declining population, in districts purely agricultural, confined to countries where land is owned and occupied under the peculiar conditions which prevail with us. In France where, as is well known, very different conditions of property and of tenure exist, the same fact nevertheless appears. Whatever increase of population arises in France, is an increase in the towns, which does not do much more than keep pace with the decrease of population in the rural districts. It is stated in an interesting article in the "Revue des Deux "Mondes"* of last month (May, 1866), that the greater number even of the small towns and villages in France remain stationary, or actually decline in population. More than half the departments of France are declining in population; and it is remarkable that one of these most nearly resembling the Highlands in the conditions of physical geography, the department of "Les Basses Alpes," is specially mentioned as having lost since the middle ages more than one-third of its population. It is a still more remarkable example of the operation of the same great law, if it be true, as the same article asserts that a similar result appears even in the new world, and that a great number of the agricultural districts in New England have lost a great part of their population by double emigration, one into the great commercial cities of the coast, another to that same far west which is attracting so many millions from the crowded populations of Europe.

Is it then a sentiment founded upon reason, is it a wise philosophy, which deplores, and regards as the symptom of decline, a phenomenon which, as a matter of fact, is exhibited over so large a part of the most thriving nations of the world, and which, as a matter of theory, can be connected so certainly with the very causes of our prosperity, and with the most convincing evidences of our growth in knowledge?

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* "Du Sentiment de la Nature," par M. Elie Reclus.

Such are the general facts and principles which account for, and satisfactorily explain, the continuous emigration of the Highlanders, so far at least as it has yet gone. But here the question arises, how far has it gone? It is true that there are particular districts less populous than they once were, but the counties, as a whole, have all gained in population since the beginning of the century, except the county of Argyll. Argyll in 1801 stood at 81,000, and in 1831 had reached its maximum at 100,000; it is now only 79,000. But Inverness was only 72,000 in 1801, and is now 88,000; Ross and Cromarty had 56,000 in 1801, and has now 81,000.

The theoretical result to which those who deplored that emigration have always looked forward, was no other than this—that the Highlands would become a mere grazing ground of the southern counties and of England—tenanted by a few large capitalists and by a few solitary shepherds. This is the result which those who do not know the Highlands, very commonly suppose has actually arrived. They think that tillage is diminishing, that fertile land is being given up to sheep, that little or nothing is being spent on the improvement of the soil. I have no hesitation in asserting that this is a pure delusion, a delusion as gross—and this is saying much—as has ever prevailed in England respecting the social condition of the most distant countries of the earth, and which is the less excusable when it is propagated respecting a country every part of which is within thirty-six hours of London. It is perfectly true that there are many spots in the Highlands which were formerly tilled which are tilled no longer; but this is only saying that the rude and ignorant agriculture of other days is gone. It is perfectly true that millions of acres are now under sheep which formerly supported, during half the year, the cattle of the summer sheiling, and for the rest of the year was ranged over by nothing but the eagle and the fox. But this is only saying that the true and natural use has been found for those upland pastures, which now maintain throughout the year thousands upon thousands of the most valuable of the animals which minister to the wants of man. It is perfectly true that glens which once maintained, with frequent famines, and with occasional assistance from unwilling Lowlanders, a population which lived in idleness, ignorance, and poverty, are now tenanted perhaps by some one or two, or three or four or five tenant farmers; but this is only saying that at last that change has come in the Highlands which had come long before in the Lowlands and in England, and which has been in every portion of this country the one indispensable condition of an improved and improving agriculture. Unfortunately, and as I think, much to our national discredit, we have not hitherto had any statistics of agriculture which are of any value: but the general fact is notorious to all who know the Highlands, that tillage has not been decreasing, but on the contrary has been increasing, and that enormously. It has retired indeed from the steeper banks and braes, and from the light shingly soils which were formerly the only soils adapted by natural drainage for cereal cultivation. It has retired also for the most part from the little patches among the rocks on which the ancient populations raised their handfuls of barley. But for every acre which has been thus abandoned to pasture, probably not less than ten acres have been added during the last century to the tillage land of the Highland counties. The valleys have to large extent been cleared and drained, and fields of turnips are yearly extending their boundaries up the slopes of the lower hills. Comfortable farmsteads have been and are being rapidly substituted for the rude and rickety buildings of the older system.

And to this improved and extended tillage, sheep farming has been not a hinderance or a substitute, but a most powerful stimulant and encouragement. Dairy farming, where it prevails, has contributed to the same result. My own impression is, not that there is too little, but that there is too much cereal cultivation in the Highlands. Except in certain districts of fine land and a comparatively favourable climate, corn is not, and can never be, raised at a profit in the Western Highlands. But it forms, or is as yet believed to form, a necessary item in the rotation of crops, and a necessary accompaniment of the turnip cultivation, which is essential for the feeding of all kinds of stock.

Let us now look at the general result as indicated by the state of occupation of land in the Highland counties. It was evident to me, from Professor Levi's paper, that he was entirely ignorant of the facts upon this subject, because he wrote as if land in the Highlands were occupied for the most part either by great capitalists holding miles of country under sheep, or else by the old crofter class, of whose condition he gave such a deplorable account. No allusion, whatever, was made to any middle class of tenantry, and accordingly in my address to the Highland Society at Inverness, I took occasion to refer to this strange omission. Professor Levi in the letter to the "Morning Post," to which I have already referred, confirmed the impression I had derived from his paper, and says specifically that he apprehends very few of that middle class of tenants exist in the Highlands. Of course the definition of classes is somewhat indeterminate. Let us, therefore, assume a definition for the purpose of arriving at determinate results. In the Lothians and in other districts of high farming, a farm of 1,000*l.* a-year rent would not be reckoned in the class of large farms; neither would it be so considered among the great grazings of the north. But I will take a much lower figure, I will assume 500*l.* a-year rent as the dividing line—farms below that rental only being reckoned as belonging to the middle class, and holdings between 20*l.* and 100*l.* to the class of small farms, all below 20*l.* to the crofting class. Now here we are upon ground where the facts can be clearly ascertained, and can be represented in statistical returns, which are not only authentic but authoritative, and are accessible to all. The valuation roll of the counties in Scotland, made up under the provisions of the law, and upon which all county assessments are raised, shows the actual value of every holding in the county, and the aggregate value of the whole. I have had the valuation roll of all the four counties in discussion examined, and the following is the result:—

In Argyleshire there are 5,095 occupiers of land, and of this number only 62 pay above 500*l.* a-year, leaving no less than 5,033 tenants, all belonging to the middle or lower classes of occupations. Of these again no less than 1,882 belong to the middle class properly so called, that is, tenants paying a rent between 20*l.* and 500*l.* And of these again 796 lie between 100*l.* and 500*l.* I may farther add, from my own knowledge and observation, though I have not the precise return, that a very large proportion of the farms between 100*l.* and 500*l.* are really farms under 300*l.* Below 20*l.* there are still no less than 3,151 crofter occupiers in the county of Argyll.

The total rental represented by the tenants above 500*l.* is 45,247*l.*, showing an average of between 700*l.* and 800*l.* a-year. The rental represented by the crofting class is 22,334*l.* The rental represented by the classes above them is 262,899*l.* So that, in fact, if we took as our standard the state of occupancy in some of the Lowland counties, we might fairly say that the whole county of Argyll is held either by the small class, or by the middle class of farmers.

In the county of Inverness the results are not dissimilar. The total number of tenants is 4,951; and of these again only 63 belong to the great capitalist class, paying upwards of 500*l.* a-year; 491 are between 100*l.* and 500*l.*; 978 are between 20*l.* and 100*l.*, whilst 3,419 belong to the crofting class. It thus appears that by far the largest portion of both counties are held by a middle class of occupiers properly so called. In Inverness the rental represented by the 3,149 crofters is only 25,191*l.*, whilst the rental represented by the three classes above them is 197,513*l.*

In Ross-shire the figures stand thus: total number of tenants 6,095. Of these only 40 are above 500*l.* rent; 333 pay between 100*l.* and 500*l.*; no less than 591 between 20*l.* and 100*l.*, and 5,131 less than 20*l.* representing the crofting class. The total rental of the county is 193,000*l.*, and the crofters pay of this only 25,491*l.*

Compare this state of occupancy with that of East Lothian, long considered, and with truth, the very garden of Scotland. The agricultural rental is 173,000*l.*, and this great rental is paid by the comparatively small number of 376 tenants; of these there are only 41 under 20*l.*; between 20*l.* and 100*l.* there are 63; between 100*l.* and 500*l.* there are 119; and above 500*l.* there are 153; so that in one of the Highland counties (Argyll) of which Professor Levi says there are very few middle class tenants, there are no less than ten times the number of that class that are to be found in East Lothian.

These figures prove conclusively that it is a delusion to suppose that the old crofting class of tenantry has been sacrificed in order to make way only, or even principally, for great grazing capitalists. They prove that the bulk of the Highland counties are being possessed by a middle class of tenantry, with holdings accessible to men of small capital, and actually held by many of the old inhabitants of the country—almost all of them above 100*l.* having the usual Scotch tenure of a nineteen years' lease.

Whilst on this point I may notice an observation which fell from Mr. Mill, in one of the late discussions on the Irish Tenure of Land Bill. Mr. Mill referred to the fact that Britain is the only country in the world where land was held almost exclusively in large estates, occupied by a class of capitalists selected by competition, and with the labouring class for the most separated altogether from either the ownership or from the occupancy of land. Now this involves I think a very erroneous conception of the facts—or at least a very partial and incorrect representation of them. It is indeed quite true that the labouring classes are for the most part separated from the ownership of land; but it is a great mistake to suppose that they are separated from the occupancy of land. The occupation of land by great capitalists, selected by competition, is indeed the condition of those counties and districts, especially in Scotland and the north of England, where agriculture is most advanced: but this is a wholly incorrect description of the class which chiefly occupies land over a great part of very thriving districts both in England and in Scotland.

It is of course not easy to give a strict definition of the labouring classes, and the mere fact of being in possession of a bit of land as a tenant still carries with it, especially in the Highlands, a social standing and position which is highly valued. So far as this mere social feeling is concerned there is a clear line, though not a very tangible one, between a labourer and a tenant. But I should say of the whole body of tenantry having farms under 300*l.* or 400*l.* a-year, that they are emphatically working men. They take a principal part in the labour of their own farms; they help to shear the corn, to carry the corn, to thatch the stacks, and their sons and often their daughters contribute the most efficient labour they employ. I know no position which combines in so eminent a degree some social consideration with continuous, active, and honourable labour as the position of the small farmers, who pay the great bulk of agricultural rent in all the western and northern counties of Scotland. And here I stop for a moment to say, that I regard this class of small farmers,—that is of farmers belonging essentially to the labouring classes,—as a valuable link in the social chain. I should deeply regret to see the West of Scotland tenanted, as a great part of the East of Scotland is, exclusively by a class of great capitalists, and with no holdings of land which are accessible to men of comparatively limited means. There is a natural tendency in this direction, because small farms involve increased expense in the number of farm buildings. But I am satisfied that there are other advantages which economically make up to proprietors for this difference; and there is the immense satisfaction of seeing a more numerous, and at least an equally industrious, tenantry. In Scotland the more permanent and costly improvements are generally executed by the landlord; but I am sure that we owe much to this class of tenants, in that steady increase in the value of land which has been so remarkable in Scotland, and nowhere more remarkable than in the Highlands.

And here I would remind the Society that the Highlands, as much as any other part of Scotland, are far in advance of the greater part of England in respect to sound principles of tenure. As a general rule, all agricultural tenants above 50*l.* of rent, hold under leases of ample duration, to secure to them the fruits of their industry and their outlay. In no part of Scotland is there less sympathy than among Highland proprietors, with the feeling so prevalent among proprietors in England, that to grant long leases to agricultural tenants is to part with a discretion and a power essential to the enjoyment of property. I recollect, not long ago, asking an English proprietor who had purchased a considerable property in the Highlands, how he liked it, and whether he often went there. "Oh," he said, "I have nothing to do with it now." I thought he must mean that it no longer belonged to him, and observed that I had not heard of its having been resold. "Oh," he said, in explanation, "I've not sold it—but I've let it on that abominable Scotch "system of yours—on a lease for nineteen years; and of course "I can't take the same interest in it as before; I consider that "I have parted with the property, so far as regards my personal "pleasure in it, for the term of the lease, and as I don't expect to "outlive it, I've virtually parted with it for my life." There is no such feeling—irrational feeling as I must be allowed to call it—among Highland proprietors. And here I cannot help saying that this feeling is founded on customs and associations which I am satisfied are even more injurious to proprietors than they are to tenants. The truth is, that as regards the mere personal interests of tenants, the objections made to tenancies at will are very often exaggerated. It is perfectly true that in almost all old estates in England the tenants are, in a sense, as secure against being turned out as if they held under lease. Custom, and the position and character of landlords, make it morally impossible for them to make unjust and arbitrary changes, and, as a matter of fact, I am told that some of the most improved parts of England are so held. But as regards the interests of proprietors, I have never had a doubt that the operation of leases is all in their favour. Under tenancies at will no time ever comes when as a matter of course the bargain between landlord and tenant is revised. To revalue farms held from time immemorial, and to impose an entirely new scale of rents, is a step which must be gratuitously undertaken by the landlord, and is often considered a hardship by the tenant. But the termination of a lease is of necessity a time for reconsideration of terms and for revisal of rents. When a proprietor has let his land for a period so long as nineteen years, he feels that he has a right at the end of it to realise any increased value which may belong to that land, whether that increase of value arises out of improvements to which he has contributed, or to the natural rise in the value of its produce. Accordingly, whether that value is brought to the test of open competition, or whether it is estimated by the judgment of valuators, a readjustment of rent is always the result, and this is a result which being periodically repeated at the end of every lease, tends to raise the rental of land and to keep the methods of agriculture up to the newest measures of knowledge and of skill.

I am satisfied that this is the real cause of the higher rental of land in Scotland as compared with England—a difference which as regards a great part of England is very observable, but does not exist in the case of those border counties where the Scotch system of leases prevails.

I must observe, however, that the good effect of leases can only arise in the case of tenants who not only have industry and some capital, but whose holdings are of a kind and of an extent which, under the local conditions of soil and climate, and of markets and produce, are sufficient to exercise that industry to advantage. To give leases to tenants whose knowledge and whose industry were such as you have heard described as prevalent in the Highlands eighty years ago, would be simply to perpetuate a system of agriculture incompatible with any improvement whatever. Even when habits of industry have improved and have become established, holdings which are too small to support or to give room for an improved husbandry, ought of course not to be kept up under the protection of leases. It must always be a local question, where and under what conditions small crofts can be permanently held with advantage.

In the east of Ross-shire there is a thriving class of crofters who, I am informed, hold generally under nineteen years' leases, and where extensive improvements have been effected by this class and by a class somewhat higher. And in this lies the great mistake made by those who advocate either fixity of tenure, or any step towards fixity of tenure indiscriminately for all tenants, and especially for the cottier tenantry of Ireland, where a very low standard of living is the standard of the people, and no want is felt for the comforts of civilization. Where skill and knowledge and capital are alike unknown security of tenure does but increase and perpetuate the worst evils in the condition of an agricultural population. The truth is, that the miseries and starvation of the cottier tenantry of Ireland have arisen under a system of very long leases, for indefinite terms of lives, held by middlemen, who subdivided their farms to a population contented if they lived at all on a few potatoes and a little milk. And be it remembered that every tenant becomes a middleman who has a holding capable of being subdivided, that is, capable of containing a few more hovels and a few more potato rigs. Long leases under such conditions of society have been, and must always be, the prolific source and origin of evils which it may take generations to remedy. I believe that the emigration which so many are now deploring in Ireland, is nothing but the remedy which nature affords for a long continued disregard of her economic laws. I shall not believe that emigration to be excessive till wages in Ireland rise to a higher level, nor until the scramble for potato grounds among a pauper tenantry gives place to legitimate competition among a class of farmers who have some knowledge and some capital, and whose scale of living compels them to demand a reasonable profit. To them let leases be given in all cases, and we shall then see in the West of Ireland, what we have already seen in the West of Scotland—an improving agriculture and a thriving people.

But we may well be asked, after the account I have given of the Highlands, how it happens that the world has heard so often of Highland distress, and has been appealed to for pecuniary aid in relief of that distress? My answer is, that this distress has existed, and has existed only, in those districts of the Highlands where the old conditions of society have not yet given way before the advance of sheep farming or of dairy farming, and those changes in the occupation of land which are a necessary step towards an improved husbandry. It has arisen exclusively among the old class of small crofters, which still exists along the west coast, and especially in the Islands. The best way of bringing this home to the mind of the Society, will be to exhibit a map of the Highlands, showing where that distress existed during the last period in which it attracted general notice, viz., during the years of the potato famine. It will be seen at once that the distressed districts are precisely those in which the old crofting system is still lingering. Wherever the crofts have been consolidated into farms of moderate size, no distress has ever arisen from the failure of potatoes. But this is a process which cannot be carried into effect without a reduction in the number of the people who now derive from the land a scant and precarious subsistence. The same conclusion can be drawn from the facts of pauperism as existing at the present moment, and with the view of bringing those facts in an authoritative form before the Society, I now add the following memorandum on the subject, kindly furnished to me by Sir John McNeill, K.C.B., who presides over the Poor Law Board in Scotland:—

"In 1851 the population of Scotland, according to the census "of that year, was 2,888,742, and that of the four principal High-"land counties (Argyll, Inverness, Ross and Sutherland), was "294,497.

"At 14th May, 1851, the total number of poor on the roll "(including dependents), in all Scotland, was 113,086 (being one "pauper to every 25·5 of the population); and in the four High-"land counties 14,856 (being one pauper in every 19·8 of their "population).

"In 1861, the population of Scotland was, according to the "census of that year, 3,062,294. The increase from 1851 to 1861 "was, therefore, at the average annual rate of 17,355, which would "give for 1864 a population of 3,114,359. But that of the four "Highland counties was then 275,345, showing an average annual "decrease of 1,915, which would give for 1864 a population of "269,600.

"At 14th May, 1864, the total number of poor on the roll "(including dependents), was, for all Scotland, 120,705, being one "pauper in every 25·8 of the population; and in the four Highland "counties 13,341, being one pauper in every 20·2 of the population.

"In the county of Perth, where the population is, for the most "part Highland, and where the decrease of the population during "the ten years referred to was at the average rate of 529 per annum, "or 5,291 in ten years; and where, too, the old crofting system, "which was in full operation a century ago, has almost ceased to "exist, the proportion of paupers to population, at 14th May, 1864, "was one in every 25·7, very nearly the average of all Scotland, "which at that date was 1 in 25·8. In 1860 it had been 1 in 25 in "Perthshire.

"In the county of Argyll, where the decrease of the population, "in the ten years referred to, was at the average rate of 922 per "annum, and where the old crofting system has been much more "extensively maintained, the proportion of paupers to population

" was, at the same date, one in every 17·1 of the population. In " 1860 it had been 1 in 16·1.

" In the Mull poorhouse combination, including the parishes of " Ardnamurchan and Morven on the mainland, together with the " islands of Mull, Iona, Tiree and Coll, the estimated population for " 1864 is 16,363, and the number of paupers (including dependents), " at 14th May, 1864, was 1,250, or 1 in every 13 of the population; " while the proportion in the neighbouring poorhouse combination of " Lorn, with an estimated population of 12,969 in 1864, was, at the " same date, 1 in 16·3. In the Isla combination it was 1 in 14·5. " In the Lochgilphead poorhouse combination it was 1 in 18·5. In " the southern district of Cantire, including the parishes of Saddell " and Skipness, Campbelton and Southend, with an estimated population, in 1864, of 11,148, the proportion was 1 in 18·4. In the " district of Cowal, on the other hand, which touches the lowlands " and stretches along the Firth of Clyde, including the parishes of " Dunoon and Kilmun, Inverchaolain, Kilfinnan, Kilmodan, Lochgoilhead, Strachur and Strathlachlane, with an aggregate estimated " population, in 1864, of 10,035, the proportion of paupers to population is only 1 in 30.

Recapitulation.

Mull poorhouse combination	1 in 13·0
Isla combination	1 „ 14·5
Lorn poorhouse combination	1 „ 16·3
Southern district of Cantire	1 „ 18·4
Lochgilphead poorhouse combination	1 „ 18·5
Cowal district	1 „ 30·0

" Any one acquainted with the county of Argyll will at once " perceive that this progressive diminution in the proportion of " paupers to population corresponds closely with the diminution in " the proportion of the population depending for subsistence on the " produce of small crofts, and that the proportion of paupers " increases as we recede from the districts in which the old crofting " system has been superseded, and the system of the more advanced " parts of the country has been established."

I will now shortly restate to the Society the facts and conclusions which can, I think, be satisfactorily established in regard to the past and present economic condition of the Highlands :—

1. That before the end of the last of the civil wars, the condition of the population was one of extreme poverty and frequent destitution.

2. That on the close of those wars, and the establishment of a settled Government, there was, during half a century, a rapid increase of population.

3. That this increase was out of all proportion to the means of subsistence.

4. That the introduction of potato cultivation increased the evil of a rapid increase in population, without any corresponding increase in skill or industry.

5. That the emigration of the Highlanders arose as a necessity out of this condition of things, and was in itself the first step towards improvement.

6. That the introduction of sheep farming was a pure gain, not tending to diminish the area of tillage where tillage is desirable, and turning to use for the first time a large part of the whole area of the country, which was formerly absolute waste.

7. That for the old bad cultivation of small crofters there has been substituted for the most part a middle class of tenantry, thriving, holding under lease, and exhibiting all the conditions of agricultural prosperity.

8. That the displacement of population by the introduction of great capitalists holding farms of very large value, has not taken place in the Highland counties to an extent nearly equal to that in which it has taken place in some of the richest counties of Scotland.

9. That the process which has been going on in the Highland counties, of a diminution in the population of the rural districts, is the same process which has long ago been accomplished in the other counties of Scotland and in England.

10. That in their case it was also deplored under the same economic fallacies—fallacies which are now applied only to the Highlands because the process is not yet completed.

11. That the prosperity of the Highlands will only be complete when the process shall have been completed also.

12. That no part of Scotland, considering the late period at which improvement begun, has advanced so rapidly, or given within an equal space of time, so large and so solid an addition to the general wealth of the country.

The LACE *and* HOSIERY TRADES *of* NOTTINGHAM.

By WILLIAM FELKIN, ESQ., F.L.S., F.S.S.

[Read before Section F, British Association, Nottingham, August, 1866.]

THE progress of the town and suburbs of Nottingham in population and material wealth during this century has been much advanced by the increase of the hosiery and lace manufacturers of the place. In regard to the population of Nottingham, from the figures which appear in the population returns, much misconception prevails. Nottingham there appears to have a population of about 75,000, that is within the limits of the municipal borough only; while including the suburban parishes, which are practically parts of Nottingham, there are about 150,000 in all. It has risen from 35,000, the number in 1811.

I.

The following account of the machine-wrought lace trade in 1865, is based on a census made by Mr. Birkin and Mr. Heymann in 1862, of the machinery in the business, and given by the former in his report to Class 24 in the London Exhibition of that year. At that time there were 1,797 circular machines making bobbin net; of these 200 were at Tiverton, 100 at Barnstaple, 360 at Chard, 500 in Derbyshire, and 700 in and near Nottingham. Also 1,588 levers, 125 traverse warps, 42 pushers, all in Nottingham and its neighbourhood, making a total, with 353 standing, of 3,552 bobbin net, and 400 warp lace frames. Of these 2,149 were making silk lace, and 1,450 cotton lace. There were employed on plain net 1,442, and on fancy 2,157, the latter being closer imitations of cushion lace than ever before made. Although since 1862 there have occurred great fluctuations in demand, and the prices of both silk and cotton materials have advanced full 75 per cent., the amount of machinery and employment was in 1865 about the same as 1862. The entire production continues to be finished and sold in Nottingham, except that made at Tiverton, which is of silk, and sold in London.

II.

The approximate number of hands employed in 1865 is calculated upon the account taken by the writer recently of the hands actually engaged in making and finishing the production of lace from a large body of bobbin net machines. These, for the whole body of the lace machinery, may be thus stated:—900 men employed in 180 shops for making machines, bobbins, carriages, points, guides, combs, needles, &c., at average wages of 33*s.* a-week; 10,300 men and youths at work in 130 larger factories and in lesser machine shops, 1,800 of whom may earn 16*s.*, 5,000 25*s.*, and 3,500 first-class levers' hands 35*s.* a-week on an average. These all work alternate shifts of four and five hours each, in the entire day of eighteen hours during which the engine is going. 4,200 boys clearing, winding, threading bobbins, 5*s.* 500 women filling bobbins and overlooking, 12*s.* 15,000 brown net menders, who usually receive nets from factories, and free them from foul or uneven threads. It is generally supplementary labour to household work, by which 4*s.* to 8*s.* may be gained, averaging 5*s.* a-week. 300 men, warpers, 25*s.*; 300 men, moulders, founders, and superintendents of machinery, 35*s.*; 60 carpenters, 30*s.*; 360 porters, 17*s.*; 120 carters, 20*s.*; 90 watchmen, &c., 20*s.*; 260 steam engineers, 22*s.*; 150 bleachers, 30*s.*; 100 male dressers of lace, 8*s.* to 30*s.*; 900 female dressers, 10*s.*; 1,000 female white menders, 12*s.*; 500 female lace folders, 10*s.*; 1,000 paper box makers of both sexes, 7*s.*; 450 warehouse women, 13*s.*; 250 female overlookers, 15*s.*; 100 draftsmen and designers, 40*s.*; 1,300 warehousemen and clerks taking salaries.

III.

There are employed in each finishing lace warehouse from 6 to 600 females, as the size and nature of the business may require. The number cannot be known except by actual census. They are taken from out-door hands in brown mending and other employments on lace. The hours are 8 A.M. to 6 or 7 P.M., and the wages are about 9*s.* on an average; overtime is paid for. The kinds of work must be seen to be understood, but are in general more wearisome than heavy. In some of the factories and work-rooms, in lace warehouses, and in dressing-rooms, the heat is sometimes oppressive. In general, ventilation is provided for, but hands do not always care to make use of it.

IV.

There is a far greater number of females employed, sometimes from a too early age, in the houses of "mistresses," often their own mothers, upon drawing, scolloping, carding, &c., processes light and simple enough, upon goods which have been obtained from finishing houses. These young people must exercise care and cleanliness on the articles, or they would be spoilt. When returned to the warehouse, the mistress receives a price, out of which she takes a portion for her labour, risk of damage, fire, light, house room, &c. Some of these persons employ as many as twenty young girls. The total number cannot be known accurately except by census. It being considered domestic employment, they are not under registration or visitation, except upon complaint made on sanitary grounds. A great improvement has been going on in regard to the age at which these children begin to do this kind of work, and the hours of their daily labour. The change dates from Mr. Grainger's report on this important subject in 1844.

V.

The remaining department of female labour in connection with the machine lace trade, is that of embroiderers with hook or needle, tambourers, or lace runners, once amounting to 150,000, now reduced to a sixth of that number. Their average weekly earnings in 1836 was 4*s.*; now it is doubled, and more for the better kinds of work. As fast as the improved machinery produced figured work, nearly finished on the machines ready for sale, the lace embroiderers were cast aside. About 1840 an immigration set into Nottingham from all the districts within fifty miles, to supply the increasing warehouse and out-door female labour required in both the lace and hosiery trades. There has thus been added to the already preponderating female population of the place, 13,000 within the last twenty-six years. In these three classes it is computed there are from 90,000 to 100,000 females, which, added to the 38,000 above enumerated, makes a total of about 135,000 employed in the lace trade of Nottingham in 1865. The materials worked up cost about 1,715,000*l.*; the wages and profits amounted to 3,415,000*l.* or thereabouts; and the net returns may be stated at 5,130,000*l.*

VI.

In the hosiery business of Nottingham, there were at work in 1865 11,000 narrow hand machines, employing domestically 7,500 men and 3,500 women and youths, at wages from 6*s.* to 26*s.*, averaging, by the statements of the hands themselves, 10*s.* 6*d.* weekly; also 4,250 wide hand machines, likewise domestically employing 4,250 men, from 10*s.* to 30*s.*, averaging, according to the workmen's statement, 15*s.* weekly wages. These 15,250 hand frames were placed in 4,620 shops, in eighty parishes spread over the county of Nottingham. The entire average wages of 42,000 frames at work throughout the whole of the hosiery trade in 1844 was about 6*s.* a-week only. These two classes of Nottinghamshire hand machines, it is computed, give employment to about 20,000 women and girls as winders and seamers, earning 4*s.* each on an average. There are about 1,000 wide power rotary frames, employing 700 men, at from 20*s.* to 32*s.*; and about 16,000 girls and women, seamers and winders, on an average of 5*s.* weekly. There are about 1,200 sets of circular round power frames improved, employing 500 men and 500 youths, at from 12*s.* to 35*s.* weekly; and 1,000 women, getting 12*s.* to 20*s.* weekly wages. The winders, cutters, menders, and others attached to these are about 11,000 women and girls, averaging 7*s.* to 12*s.* a-week. And there are about 400 warp machines making hosiery by power, employing 400 men, at 14*s.* to 35*s.*; and 200 youths, at 12*s.* to 20*s.*; besides 400 warpers, &c. (men), gaining about 25*s.*; and also 2,000 women and girls, stitching, &c., at 8*s.* a-week on an average. It is probable that there are 2,000 men employed in bleaching, dyeing, &c., and as porters, &c., at 20*s.* to 35*s.* weekly; besides 5,000 menders, folders, &c., working in warehouses, at from 8*s.* to 12*s.* weekly. To these must be added the warehousemen and clerks in eighty establishments for finishing and sale of goods in Nottingham. The Nottingham hosiery business is now believed to be giving employment to about 17,000 males and 44,000 females—together 61,000 workpeople. The estimated returns amounted in 1865 to about 3,000,000*l.*

VII.

The two staple trades of Nottingham, therefore, distributed in returns an amount of somewhat more than 8,000,000*l.* sterling last year, and furnished, in the aggregate, employment to nearly 200,000 workpeople.

VIII.

The hosiery hand frames here stated, were enumerated throughout the whole trade by my census in 1844; and the results are given with much minuteness in a paper read in this Section at the York Meeting of the British Association, where the terrible details of suffering then, and for forty years previously, endured, caused much interest and sympathy. Happily the state of things then described is now entirely changed, and the labour of the stocking maker being in larger demand than the supply, both employed and employer are enjoying an amount of prosperity never before realised, but which, we hope, may be long continued.

IX.

It will be an explanation of some interest to those who are strangers to the processes of these trades, to state that the hand-knitter of a stocking, if assiduous and clever, will knit 100 loops in a minute; and that Lee, on his first machine, made 1,000 of worsted, and on his second 1,500 loops of silk per minute. The visitor may now see made on the round frame, patented by Brunel in 1816, but since modified and improved, without any effort of the attendant but to supply yarn, 250,000 loops of the finest textures made, in various colours, per minute, with safety; an advance of 2,500-fold upon the hand-knitter. Also, that while a pillow-lace maker can form five meshes per minute by her skilful and pliable fingers, Heathcoat, in his first essay upon his bobbin net machine, made 1,000, and, before the expiration of his patent, 10,000 of these meshes per minute; a man sitting to overlook his machine now, will watch its movements producing 50,000 meshes per minute—an increase of 10,000-fold on the cushion labourer's arduous and painstaking task. The mathematical nicety of the construction of each of these machines necessary to their secure working; the beautiful simplicity of the looping stocking-frames, contrasted with the complexity and rapidity of movement through confined spaces of the thousands of bobbins and carriages, in the mesh-making and embroidering bobbin net machines, will be found to surpass the greater part of the machinery employed in any other manufacture whatever.

X.

Two or three particular points in connection with the present operations of these trades will interest this Section. A hundred years ago almost all stockings were widened and narrowed on the frame, as they had been by hand knitting, so as to fit the leg and foot exactly with neatness and comfort to the wearer. These were called full-fashioned hose. Seventy or eighty years ago the practice of making goods straight down in the leg first began; these were called *spurious* goods. From that time till 1845 Parliament was on several occasions informed that this practice caused distress, and applied to to declare this mode of making stockings illegal; but these petitions were without legislative result. Brunel's round frame makes knitted sacks without fashion, and the round web is shaped by scissors and sewn up by stitching machines or hand. One head will produce weekly thirty dozen of women's hose, sold at 3*d.* to 6*d.* a pair. At first the manufacture of these goods was hateful to the greater portion both of masters and men. So far, however, from the trade being ruined by them, it has become better than for a century past, in every branch. No doubt very many minds have been at work to produce this result; by their efforts we are clothing the feet of millions of people, who twenty years ago knew nothing of the use of stockings; these will in all probability prove precursors of demand for the better and more costly articles. At least 30,000 persons are employed by these round frames.

XI.

In the working of power lace machines, there is still the anomaly of eighteen hours' continued working of the engine in the midland factories. The women and children are now withdrawn from night labour. It is more than questionable whether the natural hours of adult male labour might not, if universally adopted, result in, at least, equal advantage to the owners of these machines, costly as they are, yet working to little profit, and conduce greatly to the comfort and morality of the workmen and their families.

XII.

In conclusion, the condition of the children, probably not much fewer than 40,000 employed by mistresses, and the circumstances attending such numbers being confined so many hours in rooms not intended for workshops, would seem to call for authorised inspection, and, I think, for registration also. The evidence taken by Mr. White, a sub-commissioner, in 1863, upon the subject of the employment of children in these trades, and his report thereon, are full of important matter; deserving of early practical notice, with a view not only to these young people working under circumstances more favourable to their health and morals, but also to their obtaining a sound education; which, under existing arrangements, is for the most part out of the question.

A NOTICE *of* PROFESSOR J. E. T. ROGERS'S HISTORY *of* AGRICULTURE *and* PRICES *in* ENGLAND, 1259-1400. *By* WILLIAM NEWMARCH, F.R.S.

[Delivered before the Statistical Society, 20th November, 1866, and taken from the Report of the Proceedings in the "Insurance Record."]

MR. CHAIRMAN—There was presented to the meeting of the International Statistical Congress, held in London in 1860, a paper entitled "On Methods of Investigation as regards Statistics of "Prices and of Wages in the Principal Trades," and it was a leading recommendation of that paper that efforts should be made, not only in this country, but also in other parts of Europe, to investigate statistically and economically the facts, so far as they could be collected, relating to the medieval period of European history, beginning about the year 1300 and extending onwards, as pointed out in the paper, according to certain lines and according to certain divisions, down to the present time. And it was shown in that paper—

"Still speaking of the historical period (1400-1700), it is likely that it may not be possible to collect a continuous and authentic body of data sufficient to establish decisively more than the two important elements (Category I) of the (1.) Prices of leading kinds of grain. (2.) Wages of common agricultural labour. But it is desirable that, as far as practicable, facts should be sought for relating to the eight following further heads of inquiry, viz. (Category II). (3.) Price of land of different kinds. (4.) Rent of land and *interest of money* lent on ample mortgage. (5.) Rent of houses and cottages. (6.) Prices of horses, cattle, sheep, poultry. (7.) Prices of butchers' meat and other provisions. (8.) Prices of clothes and furniture. (9.) Wages of artizan and skilled labour. (10.) Cost and time of conveyance from place to place or over given distances. The diversity of circumstances affecting the money value, from time to time, of all the objects comprised under these last eight heads, is so great that it would be futile to attempt any classification of them. No more can be said, than that any observation under any of these eight heads (Category II), can be of no scientific use unless it attends carefully to time, place, quantity, quality, and local specialties. The advantage of the two inquiries in Category (I) is, that they present the more simple units through long periods of years. The *price of the leading kinds of grain* represents the money value of a description of raw produce, which in itself changes but slowly as regards quality, and the production of which, through considerable intervals of time, implies the application of the same amount and kind of labour, skill, and capital. In like manner the *wages of the commoner kinds of agricultural labour* represents, for long periods, the money price of almost the same kind and amount of services rendered by labourers seeking employment under the same conditions. The two inquiries in Category (I) may be called, therefore, *Fundamental and Scientific,* while the larger number of inquiries in Category (II) can never be more than *Illustrative and Conditional.*"

Now, Sir, arising out of the suggestions of that paper, which were adopted by the Congress of 1860, our friend and fellow member, Professor Rogers, of Oxford, was led to direct his attention to the archives which are found in Oxford, relating to the prices grain and the prices of labour, as connected with some of the older foundations there, more especially Merton College and New College, from the middle of the thirteenth century—or, rather, from about the year 1259—to the beginning of the fifteenth century, or down to the year 1400. Professor Rogers found that in the case of Merton College, a college founded in 1264, and in the case of New College, founded by Wykeham some half century later, that there had been preserved on the premises of those colleges a most singularly complete series of the actual returns made year by year by the bailiffs in charge of the estates of the colleges, of every disbursement, down even to the smallest fraction, which had taken place in the management of the several properties. Professor Rogers, finding this to be so, finding that he had presented in these archives a mass of evidence of the most authentic kind, and made for purposes of the most business-like character, set himself the formidable task of investigating and classifying a very considerable part of these returns. As happens in these cases, he was led on from step to step until what at first was intended to be only a partial investigation gradually assumed the dimensions of a complete economical history of England, founded on original materials, for the space of one hundred and fifty years. Professor Rogers was then led to extend his researches to the national records preserved in London—the records in Fetter Lane and in the Tower and elsewhere; and by certain assistance which was accorded him by the Treasury, he was enabled to collect a great number of facts from these national repositories, either in corroboration or in extension of the facts which he found at Oxford. Professor Rogers has occupied himself steadily for the last five years in carrying on these investigations. He proceeded in the most careful and scientific manner. Having first got together his facts from the original parchments, he classified them, and then, when he had classified them, he proceeded to examine and tabulate them; and from these examinations and from these generalisations, which arose out of the further process, he was led to enter upon a general detail and description of the results arising from the facts themselves. As a consequence of this prolonged and systematic labour, the University of Oxford, upon a representation being made to them, consented to print the results in the two volumes which the Society has now before it. The work is entitled, "A History of Agriculture

" and Prices in England, from the year after the Oxford Parliament, " 1259, to the commencement of the Continental War, 1793, compiled entirely from Original and Contemporaneous Records, by " James E. Thorold Rogers, M.A., Professor of Political Economy in " the University of Oxford; Tooke Professor of Economic Science " and Statistics, King's College, London."—Vols. i and ii, 1259-1400. Now, Sir, my purpose to-night is simply to draw the attention of the Society to the appearance of this work, which I think they will be disposed to agree with me is one of the most extraordinary, successful, and remarkable publications which has ever appeared in connection with the application of statistics to illustrations of the economical history and progress of a country. In the second volume of this work, all the facts are set out in the greatest detail, with the utmost regard to accuracy. There are the actual facts themselves, according to the language in which they are found recorded upon the original parchment. There are then abstracts and summaries, and upon these abstracts and summaries a preliminary volume of Introduction and description is founded, and that introductory volume constitutes probably the most valuable and accurate contribution which has been made to the economical history of any country in the medieval period. I will take the liberty of reading to the Society a few passages from the first volume, from which you will see the use which Professor Rogers has made of the facts so carefully and so laboriously collected. Now, the great advantage of the investigation upon which Professor Rogers has entered, is that we have presented to us an economical history of the one hundred and fifty years from 1250 down to 1400, not founded upon the rhetorical, or exaggerated, or partial representations of chroniclers, but the history of the country is really written from materials furnished by the daily transactions of the people themselves. Professor Rogers tells us, and with a degree of certainty which we have not attained before,—he tells us that from the investigations he has made, extending over a considerable part of the country, he finds the rate of increase in agriculture was so much; and, arguing from that rate of increase, he is able to deduce conclusions as regards the population of England during the period in question, upon a mass of evidence which is entirely new. He says, for example, speaking of the quantity of land under the plough, at p. 55 of his first volume—

> " There is a general impression, which must needs be vague, and is, I believe, founded solely on antecedent probabilities, that the area of arable land in England five hundred years ago was much less than at present. I cannot agree with such a notion for several reasons, though, as I have said above, I am willing to allow a deduction for the less settled parts of the country, as well as for those which were liable to plundering incursions. Let it be admitted that some land has been

broken up which was never put under the plough till the last fifty years; and we must set against it that which has been turned into pasture, and occupied by the growth of towns. In medieval times, a park or pleasure ground in the neighbourhood of a mansion was unknown. Cultivation was carried on up to the very doors of the house, the more so, perhaps, as proximity to the master's abode was an element of security for the crop. If we walk in the grounds of a modern English park, now laid out in grass, we may often see the marks of ancient culture in ridge and furrow. Great part, for instance, of the land near Belvoir Castle is of this kind. The Lords de Ros, who then possessed the castle, assuredly cultivated the whole of the southern valley. Thousands of acres have been laid down in meadow which, centuries ago, bore crops of corn. Similarly, thousands of acres in the suburbs of ancient towns are now built over, but once were used for growing corn. In the Holywell estate, on the north side of Oxford, every parcel of ground that could be cultivated was occupied. Thus, in 1341, the fields on this manor are designated as Spital Furlong, Hithe Furlong, Street Furlong, Middle Furlong, Brere Furlong, Austin Furlong, Frogmore, the Gores, the space before the gate of the court-house, the little Butts, the piece by the manse of the Austin Friars, and that near the garden; all these been sown with corn. England has been alternately a corn-growing and a grazing country; in the period before us it was eminently the former. A considerable portion of the corn grown on the lord's estate was absorbed in the payment of wages to carters, ploughmen, shepherds, and the like. The customary allowance of farm servants on the estates of the fourteenth century is one quarter every eight or ten weeks, besides money wages. Supposing the servant were married, this would give five or six as the number of the household, each of whom was provided with the material for food by the labour of the head of the family. And I conclude that there were generally as many people existent in this country in the fourteenth century as there were, on an average, quarters of corn to feed them with. And furthermore, I think that, judging from the evidence before us, the rate of increase was not more than four times. At present it is probably fifteen times, taking one wheat crop with another. But if the present population of England and Wales produces, as it most likely does, fifteen millions of quarters yearly, and imports five, in order that its twenty millions should subsist, and we deduct one-fourth of the area now cultivated, the wheat produced in England five hundred years ago would not have sufficed for more than two and a half to three millions. But though, subject to the deduction made above, it seems likely that the area of land under the plough was not less than at present, it does not follow that wheat crops were as frequent; on the contrary, it is certain that by the system of fallows they must have been rarer. If, under these circumstances, one-fifth less wheat land was annually cultivated, the estimate of the population would be diminished by another half million; and when we take into account the absence of the most familiar among our present vegetables, and consider how important a part they fulfil in the subsistence of the people, we may perhaps be justified in a further reduction of another half million, and may set the population at no more than one and a-half millions, even at its fullest time, that is before the pestilence. But whether the number of the English and Welsh people in the fourteenth century was one and a-half, or two, or even two and a-half millions, it is certain that the rate of production precludes the possibility of its being more than the highest estimate."

Now, the point to which I desire to draw the attention of the

Society in this passage is the important fact arising out of these investigations in detail, that the rate of increase was not more than four times during the medieval period, and that that rate of increase has now risen to fifteen times; and, arguing from this fact, of which there is abundant evidence, the conclusion is irresistible that the population of England could not have been, as Professor Rogers says, more than the number which he sets down. Now, to turn to another passage. Here is a passage founded upon the statistics of the wool tax, which was granted to Edward III in 1340. He says:—

> "On Saturday, the 19th February, 1340, the Commons granted the King 30,000 sacks of wool on certain conditions. It must not be supposed that the tax was paid in kind. The price of wool at this time, as will be seen below, was about 4*l.* the sack in money of the time; that is, about 12*l.* in actual weight of silver. It will be seen, on turning to the table of taxes, vol. ii, p. 563, i., that the tax was paid in money on the Cambridge estate of Merton College. In the table annexed it will be seen that an assessment of a portion of the wool tax is given for the several counties in England, Cheshire and Durham excepted. The calculation of the burden to be borne by each contributary is exceedingly minute, being reckoned to quarters of pounds. In order to determine the proportion in which wealth was distributed in England just before the middle of the fourteenth century, I have taken the present area of each county, and divided the area by the contributions. I may be permitted to observe that when the fractional parts of a sack exceed thirteen stones, I have reckoned the sacks by a unit more; when they fall below I have omitted them entirely."

The Society will see the exceeding care and minuteness with which the whole process is worked out. He goes on—

> "Norfolk will be seen to be by far the richest county. It was in these days the site of the woollen manufacture, and its population was continually increased by immigrations of Flemings, by whom no doubt that relation was kept up with their native country which served to associate the interests of Edward with those of Arteveldt. But besides the wealth produced in this county consequent on the rise of its manufacturing industry, its ports were frequented by ships bearing foreign produce, and Yarmouth, Lynn, and Blakeney were frequently mentioned as places at which foreign trade was carried on. On the other hand, the West and North Ridings of Yorkshire, with Lancashire, were the poorest counties, contributing less to the acreage than any other divisions. Cumberland, Hereford, Cornwall, Northumberland (excluding Newcastle, which is separately assessed), Salop, Devon, and Westmoreland, all contribute less than a sack to 3,000 acres. But the southern, south midland, and eastern counties were generally wealthy, the richest after Norfolk being Middlesex (excluding London), and Oxfordshire. Time has reversed these conditions, &c."

And then follow the particulars upon which that statement is founded. I turn to another passage, in which he takes up the evidence furnished by an assessment of the town of Colchester to a certain tax about the middle of the fourteenth century. He says:—

> "These accounts purport to be a valuation for the purpose of assessing a tax on the inhabitants, and the names, and in some degree the occupations, of the contributors are given. Five years intervene between the first and second roll, but I am disposed to think that the first roll must be imperfect, as only two hundred and fifty-one persons are reckoned in it, while three hundred and ninety-one are found in the second. The last roll is probably complete, and reckoning five to a family, the inhabitants of Colchester and its neighbouring vills were probably about two thousand. The valuation given is, with perhaps the exception of corn and a few other prices, factitious, that is, the articles are estimated considerably below their ordinary value. Wheat is valued at *6s. 8d.*, rye at *5s.*, barley, peas, and beans at *4s.*, oats at *2s.* Salt and iron are also at ordinary prices, the one at *7½d.* the bushel, the other at *2s. 6d.* the hundred. Wool, fat, seacoal, and lime are also rated at ordinary prices. But cattle and domestic furniture are greatly below their average values. Oxen are valued at *6s. 8d.*, bulls and cows at *5s.*, pigs and calves at *1s.*, affri at *3s.*, sheep and lambs at *8d.* and *6d.* These rates are far less than any real price; and the estimate made of household furniture is equally low. According to the first roll the clergy were nine; the landowners, apparently possessing what we should call independent means, were seven; tanners were eleven; shoemakers thirteen; general merchants (mercatores) nine; fishmongers six; butchers five; bakers four. Besides these we find the following occupations; alemen, barber, dealer, dyer, faneer, farrier, fishmonger, fuel dealer, fuller, glazier, glover, linen-draper, miller, seacoal dealer, charcoal dealer, parchment maker, rope dealer, tailor, smith, weaver. It is not possible to decide on the occupation of eighty-nine persons assessed to the tax. The description of persons contributing to the assessment of 1301 is far more varied, though there are two hundred and twenty-nine persons whose occupation is not specially designated."

I will not trouble the Society by reading more of these passages. I have read quite sufficient to show that, by means of the facts collected by Professor Rogers in the way I have pointed out, he has been able to construct probably the first really economical history of our own or of any European country. He has been enabled to compilo a history of the one hundred and fifty years from the middle of the thirteenth to the beginning of the fifteenth centuries entirely from statistical evidence, furnished by actual business transactions during that period. He has been enabled to compile a history so authentic, so full, and so minute that, so far as my knowledge extends, it is not easy to find any equal to it, either in this country or any other. Now, Sir, the general result of this most extraordinary labour, which has been undertaken by our fellow member, amounts really to this, that by the application of purely scientific means to the extraordinary collection of data which he has been fortunate enough to find at Oxford and elsewhere, he has placed before us a series of facts and a series of deductions upon those facts of the utmost possible value in an economical sense. Professor Rogers has been enabled to show that the product of the soil was according to a certain rate of increase, and assuming that rate of increase, it is perfectly certain the population could not have been more than a certain assigned number. He has been enabled to show also that the effect of the pestilence, the effect of the "Black Death," which prevailed in Western Europe in the middle of the fourteenth century, was such as to produce, in a short space of time, a complete economical revolution; that the wages of labour rose in such a degree that it became no longer profitable for the owners of estates to cultivate them by bailiff supervision. The estates had to be placed in the hands of middlemen, and from that cause arose in a great measure the foundation of the yeoman class of the country. He has also, by his investigations, been enabled to trace, in a manner quite surprising to those persons who have not had the opportunity of seeing these volumes, the course of events which mark the great change which took place in this country from the time of Edward I down to the close of the reign of Henry IV and the later kings. I consider that it was only due to the Society that this most remarkable labour on the part of one of its members should be brought under its attention at its first meeting; and I trust the Society will agree with me in thinking that Professor Rogers is entitled to our warm commendations for having afforded, upon so extensive a scale and in so complete a manner, an example of the principles for which we have always contended in this room—namely, the capability of statistics, when properly applied, and when handled in a philosophical manner, of constituting the best history which can be framed of the real progress and of the real condition of a country.

RAILWAY EXTENSION *and its* RESULTS. *By* R. DUDLEY BAXTER, M.A.

[Read before the Statistical Society, November, 1866.]

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I.—*Introduction.*

IF a Roman emperor, in the most prosperous age of the empire, had commanded a history to be written of that wonderful system of roads which consolidated the Roman power, and carried her laws and customs to the boundaries of the accessible world, it would have afforded a just subject for national pride. The invention and perfecting of the art of road making, its sagacious adoption by the State, its engineering triumphs, its splendid roads through Italy, through Gaul, through Spain, through Britain, through Germany, through Macedonia, through Asia Minor, through the chief islands of the Mediterranean, and through Northern Africa; all these would have been recounted as proofs of Roman energy and magnificence, and as introducing a new instrument of civilisation, and creating a new epoch in the history of mankind.

A similar triumph may fairly be claimed by Great Britain. The Romans were the great Road-makers of the ancient world—the English are the great Railroad-makers of the modern world. The tramway was an English invention, the locomotive was the production of English genius, and the first railways were constructed and carried to success in England. We have covered with railroads the fairest districts of the United Kingdom, and developed railways in our colonies of Canada and India. But we have done much more than this, we have introduced them into almost every civilised country. Belgian railways were planned by George Stephenson. The great French system received an important impulse from Locke. In Holland, in Italy, in Spain, in Portugal, in Norway, in Denmark, in Russia, in Egypt, in Turkey, in Asia Minor, in Algeria, in the West Indies, and in South America Englishmen have led the way in railway enterprise and construction. To this day, wherever an undertaking of more than ordinary difficulty presents itself, the aid is invoked of English engineers, English contractors, English navvies, and English shareholders; and a large portion of the rails with which the line is laid, and the engines and rolling stock with which it is worked are brought from England.

To Englishmen the annals of railways must always be of the highest interest, and I trust that the brief inquiry upon which I am about to enter, will not be deemed a waste of labour. I propose to examine into the extension of railways at home and abroad; to show the rate at which it is proceeding; the expenditure which it has cost; and its vast commercial results. The practical questions will follow whether the construction of railways in the United Kingdom has reached its proper limit? Are we over-railroaded, as some assert, so that railways ought to be discouraged? Or are we under-railroaded, so that fresh railways ought to be invited? Are other nations passing us in the race of railway development? And lastly, can any improvements be introduced into our railway legislation?

II.—*Railways in the United Kingdom.*

So far as roads are concerned, the dark ages may be said to have lasted from the evacuation of Britain by the Romans in 448, to the beginning of the last century. During the whole of that period nothing could be more barbarous or impassable than English highways. The Scotch rebellions first drew attention to the necessity of good roads. The first step was to establish turnpikes, with their attendant waggons and stagecoaches; superseding the long strings of packhorses which up to that time had been the principal means of transport. The second step was to render navigable the rivers which passed through the chief seats of industry. The third, which commenced later in the century, was to imitate the rivers by canals, and to construct through the north and centre of England, a net work of 2,600 miles of water communication, at an outlay of 50,000,000*l.* sterling. But roads and canals combined were insufficient for the trade of Lancashire and Yorkshire, and bitter complaints were made of expense and delay in the transmission of their goods.

The desired improvement came from the mining districts. Since the year 1700 it had been the custom to use wooden rails for the passage of the trucks. About the year 1800 Mr. Outram, in Derbyshire, laid down iron rails upon stone sleepers, and the roads so constructed took from him the name of Outram's Ways or Tramways. About the year 1814, the ingenuity of mining engineers developed the stationary steam-engine into a rude locomotive, capable of drawing heavy loads at the rate of four or five miles an hour. It was proposed to construct a public railway on this principle between Stockton and Darlington. After much delay the line was opened by George Stephenson in 1825, and the experiment was successful as a goods line—unsuccessful, from its slowness, as a passenger line. The next experiment was the Manchester and Liverpool Railway, projected as a goods line to accommodate the increasing trade of those two places, which was crippled by the high rates of the canal and navigation. Before the railway was completed, another great improvement had taken place in the construction of locomotives, by the discovery of the multitubular boiler, which immensely increased the volume of steam, and the speed attainable.

The opening of the Manchester and Liverpool Railway on 15th September, 1830, was the formal commencement of the railway era. On that day the public saw for the first time immense trains of carriages loaded with passengers, conveyed at a rate of more than fifteen miles an hour, a speed which was largely exceeded in subsequent trials. The desideratum was at length obtained, viz., the conveyance of large masses of passengers and goods with ease and rapidity; and it was seen that the discovery must revolutionise the whole system of inland communication.

The public feeling was strangely excited. Commercial men and men of enterprise were enthusiastic in favour of the new railways and eager for their introduction all over the country. But the vested interests of roads and canals, and landed proprietors who feared that their estates would be injured, together with the great body of the public, were violently prejudiced against them. Railways had to fight their way against the most strenuous opposition. I quote from the "Life of Robert Stephenson," the engineer of the London and Birmingham line:—

"In every parish through which Robert Stephenson passed, he "was eyed with suspicion by the inhabitants, and not seldom "menaced by violence. The aristocracy regarded the irruption as "an interference with territorial rights. The humbler classes were "not less exasperated, as they feared the railway movement would "injure those industrial interests by which they lived. In London, "journalists and pamphleteers distributed criticisms which were "manifestly absurd, and prophecies which time has signally falsified." —Vol. i, p. 169.

The city of Northampton was so vehement in its opposition, that the line was diverted to a distance of five miles, through the Kilsby Tunnel, to the permanent injury both of the city and railway. The bill was thrown out in Parliament, and only passed in the following session by the most lavish expenditure in buying off opposition.

Other lines were soon obtained in spite of the same vehement hostility. The Grand Junction Railway from Liverpool to Birmingham, was passed in 1833. The Eastern Counties Railway was sanctioned in 1834. It was launched as a 15 per cent. line. It is said that a wealthy banker in the eastern counties made a will, leaving considerable property to trustees to be expended in parliamentary opposition to railways. The Great Western was thrown out in 1834, but passed in 1835. The London and Southampton, now the London and South Western, was proposed in 1832, but was not sanctioned till 1834.

In 1836 came the first railway mania. Up to this time the difficulty had been to pass any bill at all, now competing schemes began to be brought before Parliament. Brighton was fought for by no less than five companies, at a total expenditure of 200,000*l.* The South Eastern obtained its Act after a severe contest with the Mid Kent and Central Kent. Twenty-nine Bills were passed by Parliament authorising the construction of 994 miles of railway. In the autumn the mania raged with the greatest violence. "There is "scarcely," said the "Edinburgh Review," "a practicable line "between two considerable places, however remote, that has not "been occupied by a company; frequently, two, three, or four rival "lines have started simultaneously." The winter brought a crash, and the shares of the best companies became almost unsaleable.

In 1845 most of the great lines had proved a success. The London and Birmingham was paying 10 per cent., the Grand Junction 11 per cent., the Stockton and Darlington 15 per cent., and railway shares were on an average at 100 per cent. premium. The railway mania broke out with redoubled violence; railways appeared an El Dorado. The number of miles then open was 2,148. The number of miles sanctioned by Parliament in the three following sessions was—

	Miles.
1845	2,700
'46	4,538
'47	1,354
Total	8,592

Had all these lines been constructed, we should have had in 1852 more than 10,700 miles of railway, a number which was not actually reached till 1861, or nine years later. But the collapse in 1846 was so severe, that an Act was passed for the purpose of facilitating the dissolution of companies, and a large number of lines were abandoned, amounting, it is said, to 2,800 miles.

Railway extension was now menaced with a new danger. The effect of the panic was so great, and the losses on shares so severe, that the confidence of the public was destroyed. Besides this, as the new lines were opened, the dividends gradually decreased till the percentage of profit on capital expended had gone down from 5¼ per cent. in 1845 to 3⅓ in 1849 and 3⅛ in 1850, leaving scarcely anything for ordinary shareholders. As a consequence, shareholders lines were at an end. But since 1846 a new custom had been gaining ground of the amalgamation of smaller into larger companies. I may instance the North Eastern Company, which now consists of twenty-five originally independent railways. In this manner eleven powerful companies had been formed, which divided the greater part of England between them. The competition between these companies for the possession of the country was very great, and by amalgamations, leases, guarantees, and preference stocks, they financed a large number of lines which otherwise could not have been made. In this manner the construction of railways between 1850 and 1858 progressed at the rate of nearly 400 miles a year.

But towards the end of 1858 the great companies had exhausted their funds and ardour, and proposed terms of peace. The technical phrase was "that the companies required rest." Again, it seemed probable that railway extension would be checked. But another state of things arose. Twenty years of railway construction had brought forward many great contractors, who made a business of financing and carrying through lines which they thought profitable. The system had grown up gradually under the wing of the companies, and it now came to the front, aided by a great improvement in the value of railway property, on which the percentage of profits to capital expended had gradually risen from 3⅛ per cent. in 1850 to 4⅛ in 1860. The companies also found it their interest to make quiet extensions when required by the traffic of the country. Thus railway construction was continued in the accelerated ratio of more than 500 miles a-year. The following table gives a summary of the rate of progress from 1845 to 1865:—

United Kingdom.—Miles Constructed.

Year.	Miles Opened.	Average Number Opened per Annum.
1834............ about	200	133
'40............ "	1,200	240
'45........................	2,440	812
'50........................	6,500	367
'55........................	8,335	425
'60........................	10,434	571
'65........................	13,289	

During the same period the percentage of profit to capital expended was as follows:—

	Per Cent.
1845	5·48
'50	3·31
'55	3·90
'60	4·39
'65	4·46

The latter table, which is abridged from an annual statement in "Herepath's Journal," scarcely gives an idea of the gradual manner in which the dividends sank from their highest point in 1845 to their lowest in 1850, and of their equally gradual recovery from 1850 to 1860 and 1865. The main results of the two tables are, 1st, the close connection between the profit of one period, and the average number of miles constructed in the next five years; and, 2nd, the fact that the construction of railways in the United Kingdom has been steadily increasing since 1855, and is now more than 500 miles per annum.

The number of miles authorised by Parliament during the last six years is stated in the "Railway Times" to be as follows:—

Year.	Miles.
1861	1,332
'62	809
'63	795
'64	1,329
'65	1,996
'66	1,062
	7,323
Average	1,220

Hence the miles authorised by Parliament for the last six years have been double the number constructed; and there must be about 3,500 miles not begun or not completed, a number sufficient to occupy us for fully seven years, at our present rate of construction.

Such is a brief summary of the history of railway extension in Great Britain and Ireland. It may be thrown into five periods:—

1. The period of experiment, from 1820 to 1830.
2. The period of infancy, from 1830 to 1845.
3. The period of mania, from 1845 to 1848.
4. The period of competition by great Companies, from 1848 to 1859.
5. The period of contractors' lines and Companies extensions, from 1859 to 1865.

III.—*Distribution of Railways in the United Kingdom.*

The returns of the Board of Trade to the end of 1865, give the following distribution of the 13,289 miles then open:—

	Double Lines.	Single Lines.	Total Miles Open.
England and Wales	6,081	3,170	9,251
Scotland	946	1,254	2,200
Ireland	476	1,362	1,838
	7,503	5,786	13,289

Hence there is a considerable preponderance of double lines over single lines in England, and of single lines over double in Scotland and Ireland.

The following table shows which country has the greatest length of railways in proportion to its area:—

	Area in Square Miles.	Railway Mileage.	Square Miles per Mile of Railway.
England and Wales	57,812	9,251	6·25
Scotland	30,715	2,200	14·
Ireland	32,512	1,838	17·7

So that England and Wales have a mile of railway for every six and a-half square miles of country—being the highest proportion in the world—while Scotland has less than half that accommodation, and Ireland little more than one-third.

The following table shows which country has the greatest length of railway in proportion to population:—

	Population in 1860.	Railway Mileage.	Population per Mile of Railway.
England and Wales	20,228,497	9,251	2,186
Scotland	3,096,808	2,200	1,409
Ireland	5,850,309	1,838	3,182

So that Scotland, a thinly inhabited country, has the greatest railway mileage in proportion to her population, and we shall afterwards find that she stands at the head of all European countries in this respect.

The manner in which this railway mileage is distributed through England, deserves some attention. A railway map will show that the general direction of English lines is towards the metropolis. London is a centre to which nearly all the main lines converge. Every large town is, in its degree, a centre of railway convergence. For example, look at the lines radiating from Leeds, from Hull, from Birmingham, or from Bristol. But all those lesser stars revolve, so to speak, round the Metropolis as a central sun.

A great deal may be learnt of the character and political state of a country from the convergence of its railway lines. Centralising France concentrates them all on Paris. Spain, another nation of the Latin race, directs her railways on Madrid. Italy shows her past deficiency of unity, and want of a capital, by her straggling and centreless railroads. Belgium is evidently a collection of co-equal cities without any preponderating focus. Germany betrays her territorial divisions by the multitude of her railway centres. Austria, on the contrary, shows her unity by the convergence of her lines on Vienna. The United States of America prove their federal independence by the number of their centres of radiation.

The national character of the English nation may be traced in the same way. Though our railways point towards London, they have also another point of convergence—towards Manchester and the great port of Liverpool. The London and North Western, the Great Northern (by the Manchester, Sheffield, and Lincolnshire line), the Great Western and the Midland run to Manchester and Liverpool from the south. The Manchester, Sheffield, and Lincolnshire railway, the London and North Western Yorkshire and Carlisle lines, and the network of the Lancashire and Yorkshire Company converge on them from the east and north. The London and North Western Welsh railways, and the Mid Wales and South Wales lines communicate with them from the west. Thus our railway system shows that Manchester and Liverpool are the manufacturing and commercial capitals of the country, as London is its monetary and political metropolis, and that the French centralisation into a single great city does not exist in England.

It remains to describe the great systems into which the English railways have been amalgamated. There are in England twelve great companies, with more than 14,000,000*l.* each of capital, which in the aggregate comprise nearly seven-eighths of our total mileage and capital. They divide the country into twelve railway kingdoms, generally well defined, but sometimes intermingled in the most intricate manner. They may be classified into the following seven districts:—

	Miles Open.	Capital Expended.
1. *North Western District*—		£
London and North Western Railway	1,306	53,210,000
2. *Midland District*—		
Midland Railway	677	26,103,000
3. *North Eastern District*—		
Great Northern Railway	422	18,200,000
North Eastern "	1,221	41,158,000
4. *Mersey to Humber District*—		
Lancashire and Yorkshire Railway	403	21,114,000
Manchester, Sheffield, and Lincolnshire Railway	246	14,113,000
5. *Eastern District*—		
Great Eastern Railway	709	23,574,000
6. *South Eastern District*—		
South Eastern Railway	319	18,626,000
London, Chatham, and Dover Railway	175	14,768,000
London and Brighton Railway	294	14,561,000
7. *South Western District*—		
London and South Western Railway	500	16,364,000
Great Western Railway	1,292	47,630,000
Total	7,564	309,421,000

In Scotland there are three great companies:—

	Miles Open.	Capital Expended.
1. *South East Coast*—		£
North British Railway	732	17,802,000
2. *Central District*—		
Caledonian Railway	561	14,797,000
3. *South West Coast*—		
Glasgow and South Western	249	5,603,000
Total	1,542	38,202,000

which include three-fourths of the whole mileage and capital of Scotch railways.

In Ireland there are only two large companies:—

	Miles Open.	Capital Expended.
1. *South Western District*—		£
Great Southern and Western	420	5,712,000
2. *Midland District*—		
Midland Great Western	260	3,625,000
Total	680	9,337,000

which embrace rather more than two-fifths of the capital and mileage.

The above figures are taken from "Herapath's Railway Journal," made up very nearly to the present time.

The following table shows the average gross receipts and net profits for three years, for the United Kingdom, and also the dividends paid on ordinary stock in the above great companies, except the London, Chatham, and Dover:—

Average Receipts and Dividends per Cent.

	1857.	1861.	1865.
Gross receipts	7·87	8·27	8·57
Net profits	4·19	4·30	4·46
Dividends of great Companies—			
12 English	4·00	4·45	4·65
3 Scotch	4·55	4·90	5·70
2 Irish	5·00	5·00	3·56
Average dividends	4·51	4·78	4·64

IV.—*Cost of Railways in the United Kingdom.*

The total capital authorised and expended, up to the end of 1865, is given in the Board of Trade Returns, as follows, including the companies estimated for who have not made a return:—

Capital Authorised.

	£
Shares	434,457,000
Loans	143,968,000
Total	578,425,000

Capital Expended.

		£
Debenture Capital—		
Stock	£13,812,000	
Mortgages	98,059,000	
		111,871,000
Preference capital		124,517,000
Ordinary "		220,033,000
		456,421,000

Hence the following conclusions:—

1. The capital expended is more than half as large as the national debt.

2. The debenture and preference captal, which are practically first and second mortgages of railway property, amounted, in 1865, to more than half the whole capital expended.

So that railway property is virtually mortgaged to the debenture and preference capitalist for about half its value.

The preference capital has for some years been steadily increasing, while the ordinary capital has remained almost stationary. During 1865, the preference capital increased by 19,615,000*l.*, while the ordinary capital only increased 4,650,000*l.* As the old companies almost always increase their capital by preference stock, I anticipate that in seven or eight years the debenture and preference capital will have risen to two-thirds of the capital expended.

3. The unissued or unpaid capital was, in 1864, 95,000,000*l.* This increased largely in 1865, by the great number of miles authorised in that year, and in the return for that year is 122,000,000*l.*

The expenditure was, in 1864, divided between the three kingdoms in the following proportions including non-returning companies:—

	Capital Expended.	Cost per Mile of Railway.
	£	£
England and Wales	379,605,000	41,033
Scotland	50,206,000	22,820
Ireland	26,394,000	14,360

Thus Ireland has made her railways for one-third the cost, and Scotland for little more than half the cost of the English railways—a result which might be partly expected from their larger proportions of single lines, the greater cheapness of land, and in Ireland the lower wages of labour.

But the English expenditure is the highest in the world, and has given rise to severe remarks on the wastefulness of the English system. Let us examine the causes of expense.

1. The English expenditure includes, on a probable estimate, no less than 40,000,000*l.* sterling absorbed by metropolitan railways and termini. This of itself is 4,500*l.* per mile on the 8,890 miles constructed.

It also includes very large sums for termini in Manchester, Liverpool, Leeds, Sheffield, Birmingham, and other great towns, far beyond what is paid in continental cities.

2. The English expenditure also includes considerable capital for docks, as at Grimsby, where 1,000,000*l.* was laid out by the Manchester, Sheffield, and Lincolnshire Company, and at Hartlepool, where 1,250,000*l.* was spent by a company now merged in the North Eastern.

It also includes in many instances capital expended on steamers and capital for the purchase of canals.

3. The counties whose trade and population is greatest, and which are most thickly studded with railways, as Lancashire, Yorkshire, and Glamorgan, are exceedingly hilly, and necessitate heavy embankments, cuttings, and tunnels, which enormously increase the cost of construction. The Lancashire and Yorkshire Railway has cost 52,400*l.* per mile for the whole of its 403 miles. Had those counties been as flat as Belgium, the company might probably have saved something like 20,000*l.* per mile, or 8,000,000*l.* sterling. The Manchester, Sheffield, and Lincolnshire Company, even after deducting 1,000,000*l.* for the docks of Grimsby, have spent 53,000*l.* per mile. A flat country might have saved them a similar sum per mile, or 5,000,000*l.* sterling.

4. England, as the inventor of railways, had to buy experience in their construction. Other nations have profited by it. There is no doubt that our present system of lines could now be made at very much less than their original cost. In addition, we have paid for experiments, such as the broad gauge and the atmospheric railway.

5. The great preponderance of double lines over single (6,081 miles against 3,170), has largely increased the expense as compared with the single lines which predominate in other countries.

6. The price of land in a thickly populated country like England, must necessarily be higher than in the more thinly inhabited continental countries. But beyond this, English landowners, in the first vehement opposition to railways, acquired the habit of being bought off at high prices, and of exacting immense sums for imaginary damages. The first Eastern Counties line was said to have paid 12,000*l.* per mile for land through an agricultural country, being about ten times its real value. This habit of exaction has been perpetuated to our own day. As an every day instance, I may mention that, only a few months, ago a gentleman of great wealth was selling to a railway company which he had supported in Parliament, thirty acres of grass land, of which the admitted agricultural value was 100*l.* an acre, and three acres of limestone, of which the proved value to a quarryman was 300*l.* an acre. There was no residential damage, and the railway skirted the outside of the estate. The price of the whole in an auction room would have been about 4,000*l.* The proprietor's agents, supported by a troop of eminent valuers, demanded 25,000*l.*!

7. Parliamentary expenses are an item of English expenditure not occurring in countries where the concession of railways is the province of a department of the government. But in those countries there is almost always a "Promoter's fund," and secret service fund,

which often attain very large dimensions. Which is the preferable alternative? Besides, those who object to parliamentary committees, must be prepared to give us a practicable substitute, which will suit the habits and feelings of the English nation. Now a free nation must have liberty to bring forward schemes for the public accommodation, and to have them decided by some public tribunal after full investigation, and hearing all parties. There must be witnesses, and, where millions of money are at stake, there must be the power of being represented by the ablest advocates. Commissions appointed by the Board of Trade, or any other department, would be just as expensive. The expense of parliamentary committees is the price we pay for free trade in railways, and for our present amount of railway development.

I believe that these causes will fully account for the higher cost of English railways, and, except as regards the cost of land, I think that no valid or practical objection can be taken to them. There is certainly the consolation of knowing that in return for our money we have a more efficient system of railways than any other country.

V.—*Traffic and Benefit of Railways of the United Kingdom.*

In order to appreciate the wonderful increase of traffic which has resulted from railways, it is necessary to know the traffic of the kingdom before their introduction.

Previous to the opening of the great trunk lines in 1835, passengers were conveyed by mail and stage coaches, a system which had reached a high degree of perfection. Mr. Porter, in his "Progress " of the Nation," has calculated, from the stage coach license returns, the total number of miles travelled by passengers during 1834, as 358,290,000, which represents nearly 30,000,000 persons travelling 12 miles each. The fares were very high, being by the mails 6*d.* a mile inside and 4*d.* outside, exclusive of coachmen and guards, and rather less on the stage coaches. Including coachmen and guards, the average fares paid may be taken at 5*d.* per mile. Hence the 30,000,000 passengers paid a total of 6,250,000*l.*

Goods were conveyed by water or by road.

Water communication had been developed with great perseverance, and was nearly as follows:—

		Miles.
Canals—		
England	2,600	
Scotland	225	
Ireland	275	
		3,100
Navigations		900
Total		4,000

Being 1 mile to every 30 square miles of country.

Canal companies always regarded with great jealousy any attempt to ascertain the amount of their traffic, and the only calculation I can find is in Smiles' "Life of Brindley" (p. 464), where it is estimated at 20,000,000 tons annually. The rates charged by canal carriers were, for the great bulk of general goods, about 4*d.* per ton per mile. Thus, London to Birmingham was 40*s.* per ton, and London to Manchester 70*s.* to 80*s.*, the direct distances being 113 and 200 miles. The rates for coal were considerably less, but so high as to restrict its carriage to short distances, and to render its amount inconsiderable.

The tonnage carried by road appears to have been about one-sixth of that conveyed by canal, and may be taken at 3,000,000 tons. The rates by road were about 13*d.* per ton per mile, the stage waggons from London to Birmingham charging no less than 6*l.* per ton for the 113 miles, and those from London to Leeds, the enormous amount of 13*l.* per ton for 190 miles. Assuming that each ton by road or water was carried 20 miles—a less average than at present—the total rates paid would have been nearly 8,000,000*l.* Hence the total traffic receipts about the year 1834 may be calculated as follows:—

		£
Passengers	30,000,000 =	6,250,000
Goods, tons	23,000,000 =	8,000,000
		14,250,000

The effect of railways was very remarkable. It might reasonably be supposed that the new means of communication would have supplanted and destroyed the old. Singular to relate, no diminution has taken place either in the road or canal traffic. As fast as coaches were run off the main roads, they were put on the side roads, or reappeared in the shape of omnibuses. At the present moment there is probably a larger mileage of road passenger traffic than in 1834. The railway traffic is new and additional traffic. But railways reduced the fares very materially. For instance, the journey from Doncaster to London by mail used to cost 5*l.* inside and 3*l.* outside (exclusive of food), for 156 miles, performed in twenty hours. The railway fares are now 27*s.* 6*d.* first class, and 21*s.* second class for the same distance, performed in four hours. The average fares now paid by first, second, and third class passengers are 1¼*d.* per mile, against an average of 5*d.* in the coaching days, being little more than one-fourth of the former amounts.

On canals, the effect of railway competition was also to lower the rates to one-fourth of the former charges. In consequence, the canal tonnage actually increased, and is now considerably larger than it was before the competition of railways. Hence the railway goods traffic, like its passenger traffic, is entirely a new traffic. The saving in cost is also very great. Goods are carried by rail at an average of 1⅓*d.* per ton, or 40 per cent. of the old canal rates.

Now observe the growth of this new railway traffic. The following table from the Parliamentary returns (except for 1865), shows the receipts from passenger and goods traffic on railways in the following years:—

Increase of Traffic.

	Total Receipts.	Average Annual Increase.	Average of whole 22 Years.
	£	£	£
1843	4,535,000		
		1,079,000	
'48	9,933,000		
		1,653,000	
'55	21,507,000		1,423,000
		1,252,000	
'60	27,766,000		
		1,619,000	
'65	35,890,000		

Thus the average annual increase for the whole twenty-two years was 1,423,000*l.* per annum; and the increase was largest in the latest years.

The traffic in 1864 and 1865, was thus made up:—

	1864.	1865.
	£	£
Passengers	15,684,000	16,572,000
Goods	18,331,000	19,318,000
Total receipts	34,015,000	35,890,000

And the things carried were, exclusive of carriages and animals:—

	1864.	1865.
Passengers	229,272,000	251,863,000
Goods, tons	110,400,000	114,593,000

Being six times as many as before the introduction of railways.

The increase was extraordinary:—

	1864 over 1863.	1865 over 1864.
	£	£
Increase in passenger receipts	1,163,000	888,000
" goods "	1,696,000	986,000
	2,859,000	1,874,000

So that the increase in 1864 was just double the average annual increase. The increase in things carried was:—

	1864 over 1863.	1865 over 1864.
Increase in number of passengers........	24,637,000	22,590,000
„ tons of goods	9,800,000	4,233,000

An increase in 1864 equal to five-sixths of the whole number of passengers in 1834, and to five-twelfths of the total goods tonnage in 1834; a wonderful proof of the capabilities and benefits of the railway system.

Next let us examine the saving to the country. Had the railway traffic of 1865 been conveyed by canal and road at the pre-railway rates, it would have cost three times as much. Instead of 36,000,000*l.* it would have cost 108,000,000*l.* Hence there is a saving of 72,000,000*l.* a-year, or more than the whole taxation of the United Kingdom.

But the real benefit is far beyond even this vast saving. If the traffic had been already in existence, it would have been cheapened to this extent. But it was not previously in existence; it was a new traffic, created by railways, and impossible without railways. To create such a traffic, or to furnish the machinery by which alone it could exist, is a far higher merit than to cheapen an existing traffic, and has had far greater influence on the prosperity of the nation.

Look at the effects on commerce. Before 1833, the exports and imports were almost stationary. Since that time they have increased as follows:—

Increase of Exports and Imports.

One Year.	Total Exports and Imports.	Per Cent. Increase.	Per Cent. per Annum Increase.
	£		
1833........................	85,500,000	36	4·
'42........................	116,000,000	47	6·
'50........................	171,000,000	52	10·4
'55........................	260,000,000	44	9·
'60........................	375,000,000	30	6·
'65........................	490,000,000		

I am far far from attributing the whole of this increase to railways. Free trade, steamboats, the improvements in machinery, and other causes contributed powerfully to accelerate its progress. But I wish to call attention to two facts.

1. This increase could not have taken place without railways. It would have been physically impossible to convey the quantity of goods, still less to do so with the necessary rapidity.

Mr. Francis, in his "History of Railways," draws a striking picture of the obstacles to commerce in 1824, from the want of means of conveyance:—

> "Although the wealth and importance of Manchester and Liverpool had immensely increased, there was no increase in the carriage power between the two places. The canal companies enjoyed a virtual monopoly. Their agents were despotic in their treatment of the great houses which supported them. The charges though high, were submitted to, but the time lost was unbearable. Although the facilities of transit were manifestly deficient, although the barges got aground, although for ten days during summer the canals were stopped by drought, and in severe winters frozen up for weeks, yet the agents established a rotation by which they sent as much or as little as suited them, and shipped it how or when they pleased. They held levées attended by crowds, who almost implored them to forward their goods. The effects were disastrous; mills stood still for want of material; machines were stopped for lack of food. Another feature was the extreme slowness of communication. The average time of one company between Liverpool and Manchester was four days, and of another thirty-six hours; and the goods, although conveyed across the Atlantic in twenty-one days, were often kept six weeks in the docks and warehouses of Liverpool before they could be conveyed to Manchester. 'I took so much for you yesterday, and I can only take so much to-day,' was the reply when an urgent demand was made. The exchange of Liverpool resounded with merchants' complaints, the counting-houses of Manchester re-echoed the murmurs of manufacturers."—Vol. i, pp. 77 and 78.

This intolerable tyranny produced the Manchester and Liverpoo Railway, and gave the greatest impetus to railway development.

2. The increase of imports and exports was in strict proportion to the development of railways. The following table shows the miles of railway and navigation opened, and the total exports and imports. It must be remembered that there are about 4,000 miles of navigation, and that the exports and imports had been for some time stationary before 1833:—

Proportion of Exports and Imports to Railways and Navigations.

Year.	Miles of Railway and Navigation.	Total Exports and Imports.	Exports and Imports per Mile.
		£	£
1833	4,000	85,500,000	21,375
'40	5,200	119,000,000	22,884
'45	6,441	135,000,000	20,959
'50	10,733	171,800,000	16,006
'55	12,334	260,234,000	21,098
'60	14,433	375,052,000	25,985
'65	17,289	490,000,000	28,341

Here the increase in exports and imports keeps pace with railway development from 1833 to 1845; falls below it during the enormous multiplication of railways and the railway distress from 1845 to

1850; rises again to the former level in 1855; and outstrips it after that year, aided by the lowering of fares and the greater facilities for through booking and interchange of traffic. I cannot think that this correspondence within the two increases is accidental, especially as I shall show that it exists also in France.

But, it may be said, how do exports and imports depend on the development of the railway system? I answer, because they depend on the goods traffic; and the goods traffic increases visibly with the increase of railway mileage and the perfecting of railway facilities. Goods traffic means raw material and food brought from ports, or mines, or farms, to the producing population, and manufactured articles carried back from the producers to the inland or foreign consumers. The exports and imports bear a variable but appreciable proportion to the inland traffic. Every mineral railway clearly increases them. Every agricultural railway increases them less clearly but not less certainly. Hence I claim it as an axiom, that the commerce of a country increases in distinct proportion to the improvement of its railway system; and that railway development is one of the most powerful and evident causes of the increase of commerce.

Now, let us turn to the benefits which railways have conferred on the Working Classes. For many years before 1830, great distress had prevailed through the country. Mr. Molesworth, in his "History of the Reform Bill," says that it existed in every class of the community. "Agricultural labourers were found starved to "death. In vain did landlords abate their rents, and clergymen their "tithes; wages continued to fall, till they did not suffice to support "existence." Innumerable petitions were presented from every county in England, stating that the distress "was weighing down "the landholder, and the manufacturer, the shipowner, and the miner, "the employer, and the labourer." Trade and commerce were standing still, while population was rapidly increasing, at nearly the same rate as during the most busy and prosperous period of the French war. The increase from 1801 to 1861 is given in the census:—

England and Wales.

Year.	Population.	Increase per Cent. for Ten Years.
1801	8,892,536	11
'11	10,164,256	14
'21	12,000,236	18
'31	13,896,797	16
'41	15,914,148	14
'51	17,927,609	13
'61	20,066,224	12

The increase during the ten years from 1821 to 1831, which included so much distress, was no less than 16 per cent.,—distributed pretty uniformly between the agricultural and manufacturing counties, and in itself almost a sufficient cause for the distress. But what has happened since? Increased facilities of transit led to increased trade; increased trade gave greater employment, and improved wages; the diminution in the cost of transit and the repeal of fiscal duties cheapened provisions; and the immense flood of commerce which set in since 1850 has raised the incomes and the prosperity of the working classes to an unprecedented height. Railways were the first cause of this great change, and are entitled to share largely with free trade the glory of its subsequent increase and of the national benefit. But one portion of the result is entirely their own. Free trade benefited the manufacturing populations, but had little to do with the agriculturalists. Yet the distress in the rural districts was as great or greater than in the towns, and this under a system of the most rigid Protection. How did the country population attain their present prosperity? Simply by the emigration to the towns or colonies of the redundant labourers. This emigration was scarcely possible till the construction of railways. Up to that time the farm labourer was unable to migrate; from that time he became a migratory animal. The increase of population in agricultural counties stopped, or was changed into a decrease, and the labourers ceased to be too numerous for the work. To this cause is principally owing the sufficiency of employment and wages throughout the agricultural portion of the kingdom. If I may venture on a comparison, England was, in 1830, like a wide-spreading plain, flooded with stagnant waters, which were the cause of malaria and distress. Railways were a grand system of drainage, carrying away to the running streams, or to the ocean, the redundant moisture, and restoring the country to fertility and prosperity.

VI.—*Railways in France.*

In turning from England to France, we enter a country completely different in its railway organisation, In England everything is left to individual enterprise and independent companies. In France nothing can be done without the aid of the Government. They tried the English system, and failed, just as they tried parliamentary government and failed. The independent railway companies broke down, and it was found absolutely necessary to change to a *regime* of government guarantees and government surveillance, suited to the genius of the French people, and under which they regained confidence and prosperity.

Before the introduction of railways, France possessed an extensive system of water communication, which is now of the following extent:—

	Miles.
Navigable rivers	4,820
Canals	2,880
Total	7,700

by which goods were conveyed at very reasonable rates, varying from 1*d.* to 2*d.* per ton per mile, or about half the English charges. But the delays were very great; three or four months for a transit of 150 miles was quite usual. And the canals paid scarcely 1 per cent. dividend, while their English contemporaries were paying 5 to 20 per cent.

Communication by road was also cheaper but slower than in England. The passengers paid from 1½*d.* to 3*d.* per mile, instead of the 3*d.* to 6*d.* paid in England. But they only travelled five to six miles an hour, instead of the English eight to ten. Goods paid by road about 3*d.* per ton per mile for ordinary conveyance, and 6*d.* for quick despatch, being less than half the English charges. The distances in France were greater than in England, the commerce was less, and labour and food were cheaper; thus fully accounting for the difference.

Tramways were introduced into France in 1823, by the construction of a line of eleven miles from the coal mines of St. Etienne, and this was followed by two much longer lines of a similar character, which were opened by sections between 1830 and 1834. They are dignified in French books with the title of railways, but they were really nothing but horse tramways, and were sometimes even worked by oxen.

The success of the Manchester and Liverpool Railway provoked some real though short railways in France, especially those from Paris to St. Germain and to Versailles. But in 1837, only 85 miles had been opened, against nearly 500 in England. In 1837 and 1838 the French Chambers threw out a scheme of their Government for the construction by the State of an extensive system of railways, but granted concessions to private companies for lines to Rouen, Havre, Dieppe, Orleans, and Dunkerque. These lines were abandoned for a time, in 1839, from want of funds.

In this emergency, Mr. Locke, the great English engineer, restored the fortunes of French railways. Assisted by the London and South Western Company and Mr. Brassey, and with subventions from the French Government, and subscriptions from English shareholders, and a powerful corps of English navvies, he recommenced, carried through the line from Paris to Rouen and from

Rouen to Havre, and fairly gave the start to railway enterprise in France.

In 1842, a new law was passed, by which the state undertook the earthworks, masonry, and stations, and one-third of the price of land; the departments were bound to pay by instalments the remaining two-thirds of the land; and the companies had only to lay down rails, maintain the permanent way, and find and work the rolling stock. It was intended that three-fifths of the total cost should be borne by the state and departments and two-fifths by the companies. Under this system of subventions a number of concessions were made, the shares rose to 50 per cent. premium, and in 1848 a total of 1,092 miles had been opened. The revolution of 1848 was a terrible shock to their credit, and shares went down to half their value. Many lines became bankrupt and were sequestrated, and for three years fresh concessions were entirely stopped. But the concessions already made were slowly completed, and by the end of 1851, France had opened 2,124 miles, against 6,889 opened in the United Kingdom.

In 1852 the Emperor took French railways in hand, and by a system of great wisdom, singularly adapted to the French people, he put an end to the previously feeble management, and launched into a bold course of railway development. The French public shrank from shares without a guarantee; he gave a state guarantee of 4 or 5 per cent. interest. The French public preferred debentures to shares; he authorised an enormous issue of debentures. The companies complained of the shortness of their concessions; he prolonged them to a uniform period of ninety-nine years. At the same time he provided for the interests of the state by a rigid system of government regulation and audit. And lastly, coming to the conclusion that small companies were weak and useless, he amalgamated them into six great companies, each with a large and distinct territory; and able, by their magnitude, to inspire confidence in the public, and aid the government in the construction of fresh railways. This vigorous policy was very soon successful. Capital flowed in readily, construction proceeded with rapidity, and between the end of 1851 and 1857 the length of the railways opened was increased from 2,124 miles to 4,475, or more than doubled. England at that time had opened 9,037 miles.

France was now exceedingly prosperous. Her exports and imports had increased from 102,000,000*l.* in 1850, to 213,000,000*l.* in 1857, or more than 100 per cent. in seven years. The six great companies were paying dividends which averaged 10 per cent.; and the government guarantee had never been needed. Railways united all the great towns and ports, and met the most pressing commercial wants. But the Emperor was not satisfied. France, with double the territory of England, had only half the railway accommodation, and wide districts between all the trunk lines were totally unprovided with railways. The government engineers of the *ponts et chaussées* were prepared with plans and estimates for 5,000 miles of lines, which had been inquired into, and officially declared to be *d'utilité publique, i.e.*, a public necessity. The country districts clamoured for these lines. But how were they to be made? The public were not prepared to subscribe for them, the Government could not undertake them, and the great companies were too well satisfied with their 10 per cent. dividend to wish to endanger it by unremunerative branches.

The plan of the Emperor was intricate, but masterly. He said to the companies: "You must make these lines. The 4,525 miles of "railway already made shall be a separate system for the present, "under the name of *Ancien Reseau*, the old lines. You no longer "require the guarantee of the State for these lines. But I will give "you an extension of the ninety-nine years of your concessions, by "allowing them to commence at later dates; beginning with 1852 "for the Northern Company, and at various dates for the rest, up to "1862, for the Southern Company. I also engage that 9,000,000*l.* "sterling of the net revenue of these old lines shall for ever be "divisible among the shareholders, without being liable for any "deficit of the extension lines, an amount which will give you a "clear and undefeasible dividend of 6 to 8 per cent; with a strong "probability—almost a certainty—of getting much more from "surplus traffic."

"Next the new lines, 5,128 miles in length, shall be a separate "system, under the name of *Nouveau Reseau*, or extension lines. "Their estimated cost is 124,000,000*l.*, and you, the companies, may "raise this sum by debentures, on which the Government will "guarantee 4 per cent. interest, and ·65 sinking fund for paying "them off in fifty years. Any extra cost you must pay yourselves."

These, in their briefest possible form, are the terms on which the Emperor imposed an average of nearly 1,000 miles per company on the six great Companies of France. They were accepted with considerable reluctance. Their effect has been to lower the value of the shares of the great companies, for the bargain is considered disadvantageous. The companies cannot borrow at less than 5.75, so losing 1·10 per cent. per annum on every debenture; and as the lines cost more than the 124,000,000*l.*, the overplus has been raised by the companies by debentures, for which they alone are responsible. But, on the other hand, they get an immense amount of fresh traffic over their old lines, which must ultimately more than repay this loss. English railways would be thankful if their extensions cost them so little

In the following years other lines were added, with similar guarantees and with considerable subventions from the State, and in 1863 an additional series of lines, 1,974 miles in length, were imposed on similar terms, but with some modifications of the conventions with two of the weakest companies.

Besides these Government lines, the Emperor encouraged to the utmost the efforts of the departments, and in July, 1865, a law was passed respecting *chemins de fer d'intêret local,* which authorised departments and communes to undertake the construction of local railways at their own expense, or to aid concessionaires with subventions to the extent of one-fourth, one-third, or in some cases one-half the expense, not exceeding 240,000*l.*

Not content with passing this law, the minister of public works, in the very next month wrote to the prefets of the 88 departments of France, to acquaint them fully with its provisions, and to invite them to communicate with their councils general, and deliberate upon the subject. The result was that sixteen councils requested their prefets to make surveys and inquiries to ascertain what lines would be advisable. 32 departments authorised their prefets to prepare special plans, and even to make provisional agreements with the companies to carry out lines, subject to confirmation by the councils. Two of these made immediate votes, viz., the department of Ain, 56,000*l.*, and Herault, 260,000*l.* for lines which they approved. A third, the department of Calvados, voted subventions amounting to 1,000*l.* per mile for one line, and 2,000*l.* per mile for another line. Besides, these five departments put railroads into immediate execution by contracts with independent companies. Among these were—

	Subvention. £
Saone et Loire	14,000
„ (besides the land)	40,000
Manche (with an English company, and including land)	40,000
Rhone	240,000
Tarn	171,000

By these measures the Emperor has brought up the concessions to the following total:—

	Miles.
Ancien Reseau, or old lines	5,027
Nouveau „ or extension lines	7,565
	12,592
Being very nearly the length of our constructed lines in 1864.	
But of this mileage there has been constructed up the present time only	8,134
Leaving still unconstructed	4,458

being one-third of the whole concessions. Of this, 1,800 miles are now being constructed, and 1,600 miles are expected to be opened by the end of 1867.

Hence the lines constructed in France up to and including 1865, are 8,134 miles, or about the same length as the lines constructed in the United Kingdom to the end of 1855; so that France is ten years behind England in actual length of railways constructed, and at least fifteen years behind, England if her larger territory and population are taken into account; and I must add that France would have been very much farther behind, had it not been for the vigorous impulse and the wise measures of the Emperor Napoleon.

The progress of completion from 1837 to the present time is shown in the following table:—

Miles Constructed.

Year.	Miles Open.	Average Annual Increase.
		Miles.
1837	85	
		84
'40	338	
		34
'45	508	
		259
'50	1,807	
		301
'55	3,315	
		454
'60	5,586	
		509
'65	8,134	

This table shows the insignificant rate of progress up to 1845, and the larger but still slow progress up to 1855. From that time the effect of the Emperor's policy becomes visible in the increased rate of progression. It is expected that between 1852 and 1872 more than 9,500 miles will have been opened, quadrupling the number constructed in the previous twenty years, and contributing in the highest degree to the prosperity and wealth of the French nation.

Railway history in France may be briefly summed up in four periods:—

1. The period of independent companies from 1831 to 1841.
2. The period of joint partnership of the state and the companies from 1842 to 1851.
3. The period of Imperial amalgamations and guarantees from 1852 to 1857.
4. The period of guaranteed extension lines from 1858 to the present time.

VII.—*Cost and Results of French Railways.*

The French system of railway organisation is worthy of attentive study. It is in many points novel to an Englishman; it is often characterised by remarkable talent; and some of its regulations are very instructive and worthy of imitation.

In extent the French lines are far inferior to the English, whether judged by the area or population of the two countries.

Comparison by Area.

Country.	Area in Square Miles.	Railway Mileage. 1865.	Square Miles per Mile of Railway.
United Kingdom	120,927	13,289	9
France	211,852	8,134	26

Comparison by Population.

Country.	Population, 1861.	Railway Mileage. 1865.	Population per Mile of Railway.
United Kingdom	29,321,000	13,289	2,206
France	37,382,000	8,134	4,595

Hence, measured by area, France has only one-third of the railway accommodation, and measured by population only one-half of the railway accommodation of the United Kingdom.

The capital authorised and expended to the 31st December, 1865, was as follows:—

Capital Authorised.

	£
Ancien Reseau, or old lines	151,000,000
Nouveau „ or extension lines	209,000,000
	360,000,000

Including 64,000,000*l.* subventions.

Capital Expended, 1865.

	£
Debentures	178,700,000
Shares	54,800,000
Subventions	27,500,000
	261,000,000

So that the French companies borrow more than three times the amount of their share capital; reversing the English rule, of borrowing only one-third of the share capital. But if we consider preference capital as a second mortgage, the English practice is to borrow an amount equal to the ordinary share capital. This, however, is still a long way from the French regulations.

The capital not paid up is nearly 100,000,000*l.* Of this nearly one-half will be required in the next three years for lines approaching completion.

The cost per mile of French railways is as follows:—

	£
Ancien Reseau	30,650
Nouveau ,,	27,350

As the nouveau reseau is almost entirely composed of single lines, this does not show very great cheapness of construction. We are making our country lines much cheaper, particularly in Ireland and Scotland.

The effect of railway competition with canals was the same as in England. The canal rates were reduced to one-third of their former amount, and the canal traffic has increased instead of diminishing. The average railway fares and rates are stated by M. Flachat, in his work on railways, to be 6 to 7 centimes for each passenger, and sou per kilometre, being 1*d.* to 1$\frac{1}{10}$*d.* per mile; as compared with 1$\frac{1}{3}$*d.* per mile, the average on English railways.

The increase of traffic since 1850 is stated in the official returns as follows:—

Increase of Traffic.

Year.	Total Receipts.	Average Annual Increase.	Average Annual Increase for Fifteen Years.
	£	£	£
1850	3,824,000	1,307,000	1,238,400
'55	10,358,000	1,217,000	
'60	16,443,000	1,192,000	
'65	22,400,000		

Thus the increase has been more equable than in England, but smaller in amount, showing an average of 1,238,400*l.* against 1,423,000*l.* in England. But, I see it stated in the railway papers that the first nine months of 1866 show much more than the usual increase.

M. Flachat gives a calculation of the saving to the nation by railway conveyance, which he makes a minimum of 40,000,000*l.* a-year. But it is based on the supposition that all the new traffic would have been carried by road, which is obviously untenable. Probably 25,000,000*l.* to 30,000,000*l.* is a safer estimate. A writer in the "Dictionnaire du Commerce" goes into elaborate calculations of the money-saving arising out of the greater rapidity of railways, and values it at 8,000,000*l.*, on the basis that the time of a French citizen is worth 5*d.* an hour. I give the passage entire:—

> "In France the number of kilometres travelled by passengers in 1856 was 2,200,000,000. In travelling this distance they would have spent 290,000,000 hours, while they have only been 50,000,000 hours on the railway. The saving in time of travelling by railway has therefore been 240,000,000 hours, which, at the moderate price of 5*d.* per hour, represent an economy of 120,000,000 frs. Besides this, the time lost in stoppages at small inns (*auberges*), used to exceed that spent in travelling, and hence on this head alone we may calculate on a saving of more than 100,000,000 frs. But even if we should reduce this valuation to 80,000,000, or still lower to 60,000,000 frs., there cannot be any doubt that the saving to the traveller in the matter of time alone exceeds 200,000,000 frs. (8,000,000*l.*)."—Vol. i, p. 638.

Passing from individuals to commerce, the effect of railways has been very marked, and is warmly acknowledged by the principal French writers. The following table shows the progress of French trade:—

Increase of Exports and Imports.

Year.	Total Exports and Imports.	Increase per Cent.	Increase per Cent. per Annum.
	£		
1840	82,520,000	—	—
'45	97,080,000	15·	3·
'50	102,204,000	5·	1·
'55	173,076,000	50·	10·
'60	232,192,000	34·	6·8
'65	293,144,000	26·25	5·25

The revolution of 1848 accounts for the small increase between 1845 and 1850, but it is plain that the great increase in French commerce was between 1850 and 1860, contemporaneously with the great development of railways. When travelling in France I have always heard railways assigned as the cause of their present commercial prosperity.

The proportion which the exports and imports bore to the means of communication is shown in the following table:—

Proportion of Exports and Imports to Railways and Navigations.

Year.	Navigations (7,700 Miles), and Railways.	Exports and Imports.	Exports and Imports per Mile Open.
	Miles open.	£	£
1840	8,264	82,520,000	9,985
'45	8,547	97,080,000	11,358
'50	9,507	102,204,000	10,750
'55	11,015	173,076,000	15,712
'60	13,286	232,192,000	17,476
'65	15,830	293,144,000	18,518

Here there is a steady rise in the amount per mile, checked only by the revolution of 1848. But the principle that there is a distinct correspondence between means of communication and the exports and imports is already shown.

The effect of railways on the condition of the Working Classes has also been very beneficial. The extreme lowness of fares enables them to travel cheaply, and the opportunity is largely used. The number of third class passengers in France is 75 per cent. of the total passengers, against only 58 per cent. in England (M. Flachat, p. 60). The result of these facilities of motion has been an equalisation of wages throughout the country, to the great benefit of the rural populations. M. Flachat says:—

> "Railways found in France great inequality in the wages of labourers; but they are constantly remedying it. Wherever they were constructed in a district of low wages, employment was eagerly sought. The working classes rapidly learnt to deserve high wages by the greater quantity of work done. Agriculture had been unable to draw out the capabilities of its workmen, and was for the moment paralysed by want of hands; but industry developed fresh resources. The total amount of work done was considerably increased all over the country. The difficulties of agriculture were removed by obtaining in return for higher wages a larger amount of work than before, and also because machines began to be used in cultivation. Everywhere it was evident that increased energy accompanied increased remuneration. This is the point in which railways have most powerfully increased the wealth of France. The moral result of this improvement in the means of existence of the working class, has been to diminish the distance which separates the man who works only for himself from the man who labours for a master. In the education of the workman's children, in his clothing, in his domestic life, and even in his amusements, there is now an improvement which raises him nearer to his master."—pp. 78 and 79.

I am sure we shall all rejoice at this evidence of the benefits conferred by railways upon the working classes of that great neighbouring nation. I wish there was time to give you additional extracts, showing the immense services of railways to the industry of France, showing that France was kept back by the difficulty of communication, by the immense distances to be traversed, and the impossibility of conveying cheaply and rapidly the raw materials of manufactures. Railways have supplied this want, and have given a new impetus, to production and new outlets for the produce.

Turning to the shareholders, there are some curious facts, which surprised me not a little. The popular notion is, that in France, railway traffic bears a much higher proportion to capital expended than in England. The phrase, "They manage these things better in "France," is for ever on the lips of the British shareholder when he talks of his own paltry 4½ per cent. dividend, or of the 8½ per cent. gross receipts. The world in general believe that a 10 or 12 per cent. French line, like the Orleans of France, really has a traffic of at least that amount. But this is an entire mistake. The gross traffic receipts of France are now 9·6 per cent. on the share and debenture capital or 1 per cent. more than in England. And the net receipts, after deduction of 45 per cent. working expenses, are now 5·28 per cent. on the total share and debenture capital, being ·82, or about four-fifths, per cent. higher than in England. Yet the French companies pay an average dividend of 10 per cent., while the English pay only the natural dividend of 4½. Here are the figures for the benefit of the sceptical:—

Average Receipts and Dividends per Cent.

Name of Company.	1859.	1861.	1865.
Gross receipts	10·5	11·0	9·6
Net profits	5·7	6·2	5·28
Dividends of Great Companies—			
Nord	15·	16·5	17·87
Orleans	18·	20·	11·2
Midi	4·	10·	8·
Ouest	7·5	8·5	7·5
Est	8·13	8·	6·6
Mediterrannée	10·6	15·	12·
Average	10·54	13·	10·53

Compare these figures with those for the English lines given above. You will see the remarkable correspondence between the gross and net receipts, and the very remarkable dissimilarity in the dividends. How is this accounted for?

Look at the table of capital expended. Disregarding the 27,500,000*l.* subventions, as corresponding to the *dixiéme* tax paid by the companies, there is 233,000,000*l.* share and debenture capital, out of which a portion of the debentures are charged to capital under the conventions for the extension lines. Being for new railways, they have not yet been transferred to the revenue account. Hence the interest-bearing capital reduced and the interest itself increased.

The large amount of debentures now comes into play, on which there is paid from 5 to 5½ per cent., leaving an overplus to accumulate for the shares, so raising the interest on shares to nearly 7 per cent.

But this is not enough. In 1863 the State bound itself to contribute to certain lines annual subventions which, in 1865, came to 551,000*l.*, and the State also paid during the same year in respect of their guarantees of the debentures in the *nouveau reseau* 1,320,000*l.*, making a total subvention in 1865 of 1,871,000*l.*, an amount sufficient to pay more than 3 per cent. on the share capital of 54,800,000*l.* The guarantee of 1,320,000*l.* on the *nouveau reseau*, however, is not an absolute subvention, as it will be repayable gradually by the companies when their income exceeds a fixed amount. It is therefore a loan by the State, repayable on the occurrence of a contingency and at an uncertain date.

Thus the original interest of 5·28 per cent. on the share and debenture capital becomes 10 per cent. to the shareholder. It is a wonderfully clever arrangement, and would be exceedingly palatable to Great Eastern or even Great Northern shareholders.

But consider the difference which this shows in the ideas of the two countries. In England it would never be borne for an instant that six great companies, say, the London and North Western, Great Western, Midland, and others should receive 10 per cent. dividend, and yet obtain from the State annual subventions and guarantees amounting to 1,800,000*l.* No ministry dare propose such a job. The Reform agitation would be nothing to the clamour with which it would be greeted; and yet in France it is the most natural thing possible. Nobody says a word against it. Nay, the feeling of the French Companies and the popular opinion is, that these poor 10 per cent. shareholders have been badly used, and that their legitimate 12 or 15 per cent. from the trunk lines ought not to have been lessened.

One characteristic of the French system is the absence of competition, and this is opposed to all our ideas of freedom of communication. The Northern Company monopolises the whole traffic between Calais and Paris. The Mediterranean Company monopolises the whole traffic between Paris and Marseilles, a traffic of extraordinary importance and value. An attempt made two years ago by another Company to obtain an extension to Marseilles, and to establish an alternative route, was rejected by a Government commission after a very long inquiry. The consequence of this system is a great concentration of traffic in a small number of trains, to the profit of the companies and to the inconvenience of the traveller. There are in England, between places like Liverpool and London, about three times as many trains as there are in France between Marseilles and Paris. And besides this, goods are sent less rapidly in France, and delivered with less punctuality.

But there is a great deal to be said in defence of the French system. It avoids the duplicate lines necessary for competition, which France could not well afford. It keeps the companies prosperous and able to aid the Government in railway extension. It is not an irresponsible monopoly, able to charge high prices to its customers, but a strictly regulated monopoly, with its tariff fixed by government at the lowest prices that will be remunerative. It is like the system of our own Metropolitan Gas and Water Companies, which enjoy a monopoly within defined districts on terms settled by the law, and revised from time to time in the interest of the public. The French Government appoints commissioners of inquiry to examine into any defect or to consider improvements, and they report to the minister of public works, who has the power of making regulations which are binding on the companies. The last commission is a good instance. In February, 1864, the minister of public works issued to the companies a circular suggesting several points which required improvement, and the commission was appointed to consider their answers. The points discussed were—

1. The adoption of a means of communication between the guard and engine-driver. This was made obligatory on the companies.

2. A means of communication between passengers and the guard. This was accepted by the companies.

3. The consumption by locomotives of their own smoke. This was ordered to be carried out within two years.

4. The addition of second and third class carriages to express trains. The recommendation of the commission was accepted by the companies.

5. Separate carriages for unprotected females.

6. The commission demanded that on the great lines the speed of goods trains should be increased from 60 miles to 120 miles, without any increase of tariff. This very important question was referred to a sub-committee for further examination and for hearing objections.

From these details it is evident that the interests of the public are well looked after.

I should add that there is a continuous audit of the accounts of the companies by Government accountants, who attend from week to week at the companies' offices for that purpose.

I will at present mention only one other point in French railway law—that the Government has the power of purchasing any line of railway after fifteen years from its first concession. The price is to be fixed by taking the amount of the net profits of the seven preceding years, deducting the two lowest years, and striking the average of the remaining five years. The Government is then to pay to the company for the remainder of the concession an annual rent-charge or annuity equal to the average so determined, but not less than the profits of the last of the seven years. This mode of purchase appears preferable to the English law, since it does not require the creation of any new rentes or consols; and I commend it to the notice of Mr. Galt.

I have mentioned these prominent features of the French law, in the hope that they may be useful in suggesting improvements in the English system.

Why should we not vest in the President of the Board of Trade a power of making and enforcing regulations for the public safety and convenience? Why should we not introduce more frequent railway commissions to consider important questions, and recommend to the President of Board of Trade or to Parliament? Why should we not have a modified system of audit, and a registration of shares and debentures?

VIII.—*Railways in Belgium and Holland.*

Belgium is one of the most striking instances of the benefit of railways. In 1830 she separated from Holland, a country which possessed a much larger commerce and superior means of communication with other nations by sea and by canals. Five years later the total exports and imports of Belgium were only 10,800,000*l.*, while those of Holland were double that amount. But in 1833, the Belgian Government resolved to adopt the railway system, and employed George Stephenson to plan railways between all the large towns. The law authorising their construction at the expense of the state passed in 1834, and no time was lost in carrying it out. Trade at once received a new impetus, and its progress since that time has been more rapid than in any other country in Europe. The following table shows the activity with which the lines were constructed. We must remember that Belgium contains only one-tenth of the area of the United Kingdom, and that to make a fair comparison with our own progress we must multiply the table by ten.

Miles Constructed.

Year.	Miles Open.	Increase per Annum.
		Miles.
1839	185	25
'45	335	48
'53	720	45
'60	1,037	78
'64	1,350	

Hence, the progress for a state of the size of the United Kingdom would have been—

	Miles a Year.
1839 to 1845	250
'45 „ '53	480
'53 „ '60	450
'60 „ '64	750

a rate of increase which is as great or greater than our own.

The results on commerce are shown in the following table:—

Increase of Exports and Imports.

Year.	Exports and Imports.	Increase per Cent.	Increase per Cent. per Annum.
	£		
1835	10,760,000	45·72	11·48
'39	15,680,000	71·4	11·9
'45	26,920,000	77·41	9·67
'53	47,760,000	51·	7·3
'60	72,120,000	35·88	9·
'64	97,280,000		

I need scarcely point out the extraordinary character of this increase, which is enormous in the first ten years, and far beyond either England or France, and is not inferior to us in the later period. In the thirty years from 1835 to 1864, Belgium increased her exports and imports nearly tenfold, while England increased hers only fivefold. If we had increased our commerce in the same ratio, the English exports and imports would now be a thousand million pounds sterling.

The proportion between exports and imports and means of communication is shown in the following table, which differs from those of England and France in the rapid increase per mile:—

Proportion of Exports and Imports to Railways and Navigations.

Year.	Canals (910 Miles) and Railways Open.	Exports and Imports.	Exports and Imports per Mile Open.
	Miles.	£	£
1839	1,055	15,680,000	14,862
'45	1,205	26,920,000	22,340
'53	1,590	47,760,000	30,037
'60	1,907	72,120,000	37,818
'64	2,220	97,280,000	42,919

This enormous increase of Belgian commerce must be ascribed to her wise system of railway development, and it is not difficult to see how it arises. Before railways, Belgium was shut out from the continent of Europe by the expensive rates of land carriage, and her want of water communication. She had no colonies, and but little shipping. Railways gave her direct and rapid access to Germany, Austria and France, and made Ostend and Antwerp great continental ports. One of her chief manufactures is that of wool, of which she imports 21,000 tons, valued at 2,250,000*l.*, from Saxony, Prussia, Silesia, Poland, Bohemia, Hungary, Moravia, and the southern provinces of Russia; and returns a large portion in a manufactured state. She is rapidly becoming the principal workshop of the continent, and every development of railways in Europe must increase her means of access, and add to her trade.

Now look at Holland, which in 1835 was so much her superior. Holland was possessed of immense advantages in the perfection of her canals, which are the finest and most numerous in the world; in the large tonnage of her shipping; in her access by the Rhine to the heart of Germany; and in the command of the German trade, which was brought to her ships at Amsterdam and Rotterdam. The Dutch relied on these advantages and neglected railways. The consequence was that by 1850 they found themselves rapidly losing the German trade, which was being diverted to Ostend and Antwerp. The Dutch Rhenish railway was constructed to remedy this loss, and was partly opened in 1853, but not fully till 1856. It succeeded in regaining part of the former connection. But now observe the result. In 1839 the Dutch exports and imports were 28,500,000*l.*, nearly double those of Belgium. In 1862 they were 59,000,000*l.*, when those of Belgium were 78,000,000*l.* Thus while Holland had doubled her commerce, Belgium had increased fivefold, and had completely passed her in the race.

Before leaving Belgium I ought to mention the cheapness of fares on her railways, which have always been much below those on English lines; a further reduction has lately been made, and I see by a French paper, that the results has been to increase the passenger receipts on the State lines for the month of April from 76,936 frs. in 1865 to 198,345 frs. in 1866, of which 168,725 frs. was from third and fourth class passengers; a fact which is in favour of the plan of Mr. Galt. But it must be remembered that Belgium is the most densely populated country in the world, having 432 inhabitants to the square mile, while the United Kingdom has only 253, and England and Wales 347. A system which will pay admirably between large cities at short distances from each other, and on lines which cost little to construct, might break down completely on lines of expensive construction in more thinly inhabited districts. Mr. Galt takes his instances from railways in dense populations, and applies the rules thus obtained to railways which are under totally different conditions, and I fear that this vitiates in a great degree the soundness of his conclusions.

IX.—*Railways in the United States.*

In any paper on foreign railways it is impossible to omit the United States, a country where they have attained such gigantic proportions. The increase of United States lines is as follows—

Miles Constructed.

Year.	Total Mileage.	Increase per Annum. Miles.
1830	41	
'40	2,197	215
'45	4,522	465
'50	7,475	590
'55	17,398	1,984
'60	28,771	2,274
'64	33,860	1,272

The mileage here shown is something enormous: four times that of France, two and a-half times that of England, and nearly as large as the total mileage of the United Kingdom and Europe, which is about 42,000 miles.

In so young a country, inland traffic gives these lines the greater part of their employment, and there are no masses of expensive manufactured goods as in England or Belgium to swell the total value of foreign trade. Foreign commerce is still in its infancy, but an infancy of herculean proportions, as the following table shows :—

Increase of Exports and Imports.

Year.	Total Exports and Imports.	Increase per Cent.	Increase per Cent. per Annum.
	£		
1830	31,000,000	47·60	3·40
'44	45,759,000	50·00	8·33
'50	68,758,000	62·60	12·52
'55	111,797,000	42·00	8·40
'60	158,810,000		

The advance in the annual increase is very striking, being from 3½ per cent. per annum in the infancy of railways to 8 and 12 per cent. when their extension was proceeding rapidly. Before the introduction of railways America possessed a very extensive system of canals, which amounts to nearly 6,000 miles. At the present time both canals and railways are crowded with traffic. The following table shows the relation between the growth of trade and the increase of means of communication.

Proportion of Exports and Imports to Railways and Canals.

Year.	Canals (6,000 Miles) and Railways Open.	Total Exports and Imports.	Exports and Imports per Mile.
	Miles.	£	£
1830	6,040	31,000,000	5,130
'44	10,310	45,759,000	4,437
'50	13,475	68,758,000	5,102
'55	23,398	111,797,000	4,778
'60	34,770	158,810,000	4,567

Thus in the United States, as well as in England, France, and Belgium, the exports and imports bear a distinct relation to the miles of communication open, but lower in amount than in the European countries, as was only likely from the thinner population.

Vast as is the mileage of the American railways, it is by no means near its highest point. The lines in construction, but not yet completed, are stated to be more than 15,000 miles in length, a larger number than the whole mileage of the United Kingdom, completed and uncompleted.

The manner in which these lines are made is very remarkable.

The United States are very thinly populated, not containing on an average more than 32 persons per square mile in the Northern States, and 11 in the Southern. Even the most populous Northern States have only 90 persons per square mile, while England and Wales have 347 per square mile. A less expensive railway, of smaller gauge, was therefore necessary, and the lines are almost invariably "single tracks." Their first cost has averaged from 7,000*l.* up to 15,000*l.* per mile, or about one-third of the expenditure in England. Of course they are very inferior in weight of rails and in sleepers, ballasting, stations, and efficiency. Even this expense was difficult to provide for, where the inhabitants are so widely scattered. But in America the greatest encouragement is given to railroads, and every facility is afforded for their extension, as they are considered the most important sources of wealth and prosperity. Shares are taken largely by the inhabitants of the district traversed, land is often voted by the State, and the cities and towns find part of the capital by giving security on their municipal bonds.

I must not omit to mention the great Pacific railways, one of which is now being constructed from the State of Missouri for a distance of 2,400 miles across Kansas, Nebraska, Utah, and Nevada, to San Francisco, in California. It receives from the general government subsidies of 3,300*l.*, 6,600*l.*, or 9,900*l.* per mile, according to the difficulty of the ground, besides enormous grants of land on each side of the line. When this railway is completed, the journey from Hong Kong to England will be made in thirty-three days instead of the present time of six weeks, and it is anticipated that a large portion of our Chinese traffic will pass by this route.

No one can study the United States without being struck by the great railway future which lies before them, when their immense territories are more thickly peopled, and their mineral resources and manufactures have been developed. The distances to be traversed are so vast, and the traffic to be carried will be so enormous, that the railways of the United States will far exceed in extent, and in the trade which will pass over them, anything that has hitherto been known in the history of the world.

X.—*Railways and Free Trade.*

In the preceding sections I have endeavoured to describe the progress of railway extension in England, France, Belgium and the United States, the four countries where it has received the greatest development, and I have pointed out the very great increase of commerce and national prosperity which has been its result. But in the case of England, I am bound to meet a very probable objection. I shall be asked, why do you attribute this increase of commerce mainly to railways? Was it not caused by free trade?

The general opinion undoubtedly is, that free trade is the principal cause of the immense increase, since 1842, of English commerce. We see this opinion expressed every day in newspapers and reviews, in speèches and parliamentary papers. I hold in my hand a very able memorandum, lately issued by the Board of Trade, respecting the progress of British commerce before and since the adoption of free trade, in which the same view is taken, and in which the statistics of the exports and imports, since 1842, are given as mainly the result of free trade. It is true that there is a reservation, acknowledging "that the increase of productive power, and other causes, have "materially operated in effecting this vast development." But in the newspaper quotations and reviews this reservation was left out of sight, and the striking results recorded in the memorandum were entirely ascribed to free trade.

While acknowledging to the full the great benefits and the enlightened principles of free trade, I have no hesitation in saying that this popular view is a popular exaggeration, which it is the duty of staticians to correct; and I think that my reasons will be considered satisfactory by this Society. In the first place, the development of English commerce began in 1834, before free trade, but simultaneously with railways; and between 1833 and 1842 the exports and imports increased from a stationary position at 85,500,000*l.*, to 112,000,000*l.*, or 31 per cent. In the next place, from 1842 till 1860, England was the only country which adopted free trade. If England had also been the only country that made such enormous progress, we might safely conclude that free trade was the chief cause of so great a fact. But this is not the case. England is only one of several countries which made an equal advance during the same period, and none of those countries, except England, had adopted free trade. The total increase of exports and imports from 1842 to 1860 in the three first countries described in this paper, and from 1844 to 1860 in the United States, was as follows:—

Country.	1842.	1860.	Increase per Cent.
	£	£	
England	112,000,000	375,000,000	234
France	86,280,000	232,200,000	169
Belgium	19,400,000	72,120,000	272
	1844.		
United States	45,757,000	158,810,000	305

Thus, the English rate of increase is only third in order, and is exceeded both by Belgium and the United States. If the latter country is objected to on account of its rapid growth in population by immigration, still Belgium remains, exceeding the English rate of increase by 36 per cent. Look at the argument by induction. Here are four countries under the same conditions of civilization, and having access to the same mechanical powers and inventions; which far outstrip contemporary nations. It is a probable conclusion that the same great cause was the foundation of their success. What was that common cause? It could not be free trade; for only one of the four countries had adopted a free trade policy. But there was a common cause which each and all of those four countries had pre-eminently developed—the power of steam—steam machinery, steam navigation, and steam railways. I say, then, that steam was the main cause of this prodigious progress of England, as well as of the other three countries.

But I will go a step farther. Steam machinery had existed for very many years before 1830, and before the great expansion of commerce. Steam navigation had also existed for many years before 1830, and before the great expansion of commerce, and steam navigation was unable to cope with the obstacle which before 1830 was so insuperable, viz.: the slowness and expense, and limited capacity of land carriage.

I come then to this further conclusion, that the railways which removed this gigantic obstacle, and gave to land carriage such extraordinary rapidity and cheapness, and such unlimited capacity, must have been the main agent, the active and immediate cause of this sudden commercial development.

This conclusion appears to become a certainty when I find, from the investigation through which we have travelled, that in every one of these four great examples, the rapid development of commerce has synchronised with an equal rapid development of railways—nay, that the development of commerce has been singularly in proportion to the increased mileage of railways—so that each expansion of the railway system has been immediately followed, as if by its shadow, by a great expansion of exports and imports.

But I will not leave the case even here. Consider what are the burdens which press upon trade and manufactures. If our merchants could be presented with that wondrous carpet of the Genii of the "Arabian Nights," which transported whatever was placed upon it in one instant through air to its farthest destination, overleaping mountains and seas and custom houses, without expense or delay, we should have the most perfect and unburdened intercourse. But see what barriers and burdens there are in actual fact when we trace the journey of the raw material, such as cotton or wool, to the British manufacturer, and its export as a manufactured article.

Burdens upon Imports and Exports.

Raw Material—

1. Inland carriage to the sea.
2. Voyage to England.
3. Import duty.
4. Inland carriage to the manufacturer.

Manufactured Article—

5. Inland carriage to the sea.
6. Voyage to foreign country.
7. Import duty.
8. Inland carriage to the customer.

Here are eight distinct burdens or charges increasing the price of our manufactures to the foreign consumer. Out of these—

Four are inland carriage,
Two are navigation, and only
Two are custom house duties.

Now, except in the case of prohibitory duties, it was undoubtedly the case that, before the introduction of railways, inland carriage was the most expensive of these burdens. In countries unprovided with canals, a very few miles of road transport was an absolute prohibition. It is so in many parts of India, Spain and Turkey at the present day. In countries provided with canals, rates were high, and transport slow, and always coming to a dead lock. Hence the relief afforded by railways, both in cheapness and saving of time, was far beyond any relief by free trade in taking off moderate duties.

In a vast number of cases railways did more than cheapen trade, they rendered it possible. Railways are the nearest approach that human ingenuity has yet devised to that magic carpet of the "Arabian Nights," for which I ventured to express a wish.

For all these reasons I maintain that we ought to give railways their due credit and praise, as the chief of those mighty agents which, within the last thirty years, have changed the face of civilisation.

XI.—*Railways and National Debts.*

In one important point the nations of Latin race have stolen a clear march upon the nations of Teutonic origin, of England, Germany, and the United States, by their appreciation and adoption for railways of the principle of a sinking fund. The idea owes its origin to the semi-Latin, semi-Teutonic, intellect of Belgium. When the Belgian Government in 1834 projected a system of State railways, to be constructed with money borrowed by the State, they provided for the extinction of the loans in fifty years by an annual sinking fund. The amount borrowed was nearly 8,000,000*l.* sterling, and the whole will be paid off in 1884, after which date the whole profits of the State lines, 352 miles in length, will become part of the revenue of the nation. But so good an investment are these lines, that their present net income is 525,000*l.* a-year, and is increasing at a rate which promises in 1884 a net revenue of 960,000*l.*, a sum which will be sufficient to pay the interest on the whole national debt, now 26,000,000*l.* Besides this, the conceded lines, 1,000 miles in length, will be amortized and become State property in 90 years from the beginning of their concessions, and the profits on a capital of more than 13,000,000*l.* will then be available towards the State revenue.

This system was copied by France, and imitated from her by the other Latin nations, Spain, Portugal, and Italy, as well as by the non-Latin States of Austria and Holland. All these countries, at the end of various terms of 99, 90, and 85 years, will practically pay off a large portion of their national debt. Improvident Spain will pay off about 40,000,000*l.* out of her debt of 164,000,000*l.* Heavily-burdened Austria will practically abrogate something like 65,000,000*l.* out of her debt of 250,000,000*l.* Italy will wipe out a large portion of her debt of 176,000,000*l.*

But the most remarkable example is France; and I will endeavour to explain as briefly as possible the working of the French system. In France the railways are conceded for 99 years, but it is one of the conditions of the grant that all the capital, whether in shares or debentures, shall be paid off within that term by an annual *amortissement*, or sinking fund. The small amount of this annual payment is very extraordinary. The French rate of interest is 5 per cent., and the annual sinking fund necessary to pay of 100 francs in 99 years is as nearly as possible ·04. Put into the English form, for the sake of clearness, this means that the annual sinking fund necessary at 5 per cent. to redeem 100*l.* in 99 years is only 1*s.* per annum. As debentures are issued in France for less than 99 years when part of the concession is run out, the amount of the sinking fund varies, but it is usually said to amount on the average to one-eighth per cent. As the whole expended capital of French railways represented by shares and debentures, is 233,000,000*l.*, it follows that the total annual sinking fund paid by the French companies for the redemption of that sum is less than 300,000*l.* The result is marvellous, that for 300,000*l.* the French nation will acquire, in less than 99 years, an unencumbered property of 233,000,000*l.* sterling. But this is not all. The railways represented by that 233,000,000*l.* sterling produced in 1865 a net revenue of about 12,500,000*l.* Before 1872 further railways will have been completed, which will be amortized at the same date as their parent lines, and will produce before many years a net income of 4,000,000*l.*, making a total net income of the French railways

16,500,000*l.* But the total charge of the French national debt in 1865 was only 16,000,000*l.* So that France has now a system in operation which, in less than 90 years from the present time, will relieve the country from the whole burden of her national debt of nearly 500,000,000*l.*

Is it allowable in me to ask, why are we doing nothing of the sort? When so many other nations are paying off by means of their railways a portion, or the whole of their national debts, why are we, with all our wealth and resources, to do nothing? A scheme of amortization suited to the habits of the English people, is perfectly possible, and the peculiar position of railway companies at the present moment renders it easy to carry out. I will say nothing about debentures, because a plan is now before the government dealing with them. But, I say, respecting Share Capital, that it would be perfectly practicable for the state to become the possessor of a large proportion of this stock in a comparatively short time, and at no great expense. An annual sinking fund of 5*s.* per cent. will pay off 100*l.* in seventy-two years, reckoning only 4 per cent. interest. Hence, in seventy-two years, an annual sinking fund of 500,000*l.* a-year, will pay off 200,000,000*l.* The government duty on railways amounts to 450,000*l.* a-year, and will soon reach 500,000*l.* My proposal would be to make this a sinking fund towards purchasing 200,000,000*l.* of preference and other stock, and let it be invested annually by the Board of Trade, or by commissioners appointed for the purpose, like those appointed for the national debt. Instead of cancelling each share as it is purchased, let it be held in trust for the nation, and the dividends applied every year in augmentation of the sinking fund. In this manner, at the end of about seventy-two years 200,000,000*l.* of preference and ordinary share capital would become the property of the nation, and its dividends become applicable to the interest of the national debt. As railway dividends average 4 to 4½ per cent., the dividends on the redeemed capital would pay the interest on more than 250,000,000*l.* consols, and be equivalent to the redemption of that amount of our national debt.

I believe that this is a practical scheme. In a slightly different, form it is now being carried out in France, Belgium, and other continental states. I trust that before long we shall cease to be almost the only nation in Europe which does not act on the principle "that railways are the true sinking fund for the payment of the "national debt."

The advantages of such a sinking fund over a sinking fund invested in consols, are threefold:—

1. It would be invested annually in railway capital at a higher interest, and thus accumulate more rapidly.

2. It would have a different primary object, viz., the purchase of a State interest in railways, and would, therefore, be more likely to enlist popular feeling in favour of its maintenance.

3. It would be distinct and separate from the national debt, and not under the same control, and would, therefore, be less liable to be diverted to the financial necessities of the hour.

Perhaps it will be said that a railway sinking fund is unsuited to the character and habits of the English people. But surely it is our character to be prudent and to pay off encumbrances; and to adopt the best means of accomplishing that object. Surely it is not right in a great and wealthy and enlightened nation like England to encur the reproach of being spendthrift of her resources and reckless of her debts.

XII.—*Further Railway Extension.*

England is undoubtedly the country in the world best provided with railways. The statistical comparison stood thus at the end of 1865:—

Railways Compared with Area and Population.

Country.	Railway Miles Open.	Square Miles per Railway Mile.	Population per Railway Mile.
England and Wales	9,251	6¼	2,186
1. Belgium	1,350	8	3,625
2. United Kingdom	13,289	9	2,206
3. Switzerland	778	19	3,257
4. Prussia and Germany (except Austria)	8,589	20	3,525
5. Northern United States (except Kansas, Nebraska, and Oregon)	24,883	25	801
6. France	8,134	26	4,607
7. Holland	372	29	9,066
8. Italy	2,389	41	9,084
9. Austria	3,735	63	9,375
10. Spain	2,721	67	5,991
11. Portugal	419	87	8,555
12. Southern United States	10,300	92	1,025
13. Canada	2,539	136	987
14. India	3,186	287	42,572
Total of the 14 countries	82,495	—	—

But England has a much greater proportion of double lines, and a larger number of trains on each line; while, on the other hand, Belgium and other continental nations have lower fares, and give greater accommodation to third and fourth class passengers. Both parties have something to learn—they to admit the principle of competition and increase the number of railways, we to provide cheap conveyance for the masses without the clumsy device of excursion trains.

But now comes the question, do England and Belgium need further railways, or are they already sufficiently provided? It may partly be answered by the fact that in England there are about 3,500 miles authorised by Parliament which have not yet been made, and that in Belgium there are 450 miles (equal to 4,500 in England) conceded but not constructed. And we may also point to the circumstance that in England and Wales there were, in 1865, 6,081 miles of double line against 3,170 miles of single, showing that there is a want of cheap lines through rural districts. A glance at the railway map will confirm this inference. The lines run in the direction of the metropolis or some great town, and there are few cross-country lines. The distance between the lines supports this conclusion. Deducting the manufacturing districts, which are crowded with a railway network, the remainder of the country gives an average of about fifteen miles between each mile of railway. The average ought not to be more than eight or ten miles.

The advantage of a railway to agriculture may be estimated by the following facts. A new line would, on an average, give fresh accommodation to three and a-half miles on each side, being a total of seven square miles, or 4,560 acres for each mile of railway. It would be a very moderate estimate to suppose that cartage would be saved on one ton of produce, manure, or other articles for each acre; and that the saving per ton would be five miles at 8*d.* per mile. Hence the total annual saving would be 768*l.* per mile of railway, which is 5 per cent. interest on 15,000*l.* Thus it is almost impossible to construct a railway through a new district of fair agricultural capabilities without saving to the landowner and farmer alone the whole cost of the line. Besides this, there is the benefit to the labourers of cheaper coals, and better access to the market. There is also the benefit to the small towns of being put into railway communication with larger towns and wholesale producers. And there is the possibility of opening up sources of mineral wealth.

Somebody ought to make these agricultural lines, even though they may not pay a dividend to the shareholder. But who is that somebody to be? The great companies will not take the main burden lest they should lower their own dividends. The general public will not subscribe, for they know the uncertainty of the investment turning out profitable. And notwithstanding the able letters signed "H," in the "Times," some months ago, I cannot advocate the necessarily wasteful system of contractors' lines, or believe in the principle, "Never mind who is the loser, so that the "public is benefited." Railway extension is not promoted in the long run by wasteful financing and ruinous projects. On the contrary, such lines injure railway extension, by making railways a byeword, and depreciating railway property; and they render it impossible to find supporters for sound and beneficial schemes.

The proper parties to pay for country lines are the proprietors and inhabitants of the districts through which they pass. They are benefited even if the line does not pay a dividend. They have every motive for economical construction and management, and can make a line pay where no one else can. But they will not subscribe any large portion of the capital as individuals. Very few will make a poor investment of any magnitude for the public good, though all might be ready to take their part in a general rate. Almost every country but our own has recognised the fact, and legislated on this basis, by empowering the inhabitants of a district which would be benefited to tax themselves for the construction of a railway. I have shown that in France either the department or the commune may vote a subvention out of their public funds; and that, in the United States, the municipalities vote subsidies of municipal bonds. In Spain, the provinces and the municipalities have the power to take shares or debentures, or, if they prefer it, to vote subventions, or a guarantee of interest. In Italy, the municipalities do the same thing. Why should not England follow their example, and authorise the inhabitants of parishes and boroughs to rate themselves for a railway which will improve their property, or empower them to raise loans on the security of the rates, to be paid off in a certain number of years by a sinking fund, as is done for sanitary improvements? I see no other way of raising the nucleus of funds for carrying out many rural lines which would be most beneficial to the country.

I can give a remarkable instance of the benefits caused by an unremunerative railway. In 1834 the inhabitants of Whitby projected a line from Whitby along the valley of the Esk to Pickering, halfway to York. The line was engineered by George Stephenson, and was originally worked by horse-power and carriages on the model of the four-horse coaches. But though considered at that time one of the wonders of the world the line was utterly unprofitable, and the Whitby people looked upon it as a bad speculation, much as the shareholders of the London, Chatham, and Dover look on their present property. The railway was ultimately sold to the North-Eastern Company; but though the shareholders got no advantage, somebody else did. Farmers and labourers came to market in Whitby, and got coals and other necessaries at reduced rates, while they sold their produce better. Very soon rents began to rise, and I find the total rise since the construction of the railway has been from an average of 15*s.* per acre up to 22*s.*, or nearly 50 per cent. But far greater consequences resulted. The cliffs at Whitby were known to contain nodules of ironstone, which were picked up and sent to iron-works on the Tyne. Soon after the opening of the railway, George Stephenson and a number of Whitby gentlemen formed a company, called the Whitby Stone Company, for working stone quarries and ironstone mines at Grosmont, about six miles up the railway. At first the ironstone was very badly received by the iron founders, and it was only after long and patient perseverance that the company got a sale for what they raised. It was not till 1844 and 1846 that the merits of the Cleveland ironstone were fully acknowledged, and large contracts entered into for its working throughout the district. Thus the unprofitable Whitby and Pickering Railway opened up the Cleveland iron district, and caused the establishment of a very large number of foundries, and the employment of thousands of workmen, and has added very materially to the wealth of England.

XIII.—*Conclusion.*

From the facts which have been brought forward, I draw the following conclusions :—

1. Railways have been a most powerful agent in the progress of commerce, in improving the condition of the working classes, and in developing the agricultural and mineral resources of the country.
2. England has a more complete and efficient system of railways than any other country; but is not so far ahead that she can afford to relax her railway progress, and to let her competitors pass her in the race.
3. England ought to improve the internal organisation of her railways, both as to finance and traffic, and to constitute some central authority with power to investigate and regulate.
4. A Sinking Fund should be instituted to purchase for the State a portion of the railway capital, and so to lighten the charge of the national debt.
5. Power should be given to parishes and boroughs to rate themselves in aid of local railways, in order to facilitate the construction of country lines.
6. England, as a manufacturing and commercial country, is benefited by every extension of the railway system in foreign countries; since every new line opens up fresh markets, and diminishes the cost of transporting her manufactures.

I cannot conclude without saying a word on the future of railways. The progress of the last thirty-six years has been wonderful, since that period has witnessed the construction of about 85,000 miles of railway. The next thirty-six years are likely to witness a still greater development, and the construction of far more than 85,000 miles. We may look forward to England possessing, at no distant date, more than 20,000 miles, France an equal number, and the other nations of the continent increasing their mileage until it will bear the proportion of 1 railway mile to every 10 square miles of area, instead of the very much less satisfactory proportions stated in the comparative table. We may expect the period when the immense continent of North America will boast of 100,000 miles of line, clustered in the thickly-populated Eastern states, and spreading plentifully through the Western to the base of the Rocky Mountains, and over to California and the Pacific. We may anticipate the time when Russia will bend her energies to consolidating her vast empire by an equally vast railway network. We may predict the day when a continuous railroad will run from Dover to the Bosphorus, from the Bosphorus down the Euphrates, across Persia and Beloochistan to India, and from India to China. We may look for the age when China, with her 350,000,000 of inhabitants, will turn her intelligence and industry to railroad communication.

But who shall estimate the consequences that will follow, the prodigious increase of commerce, the activity of national intercourse, the spread of civilization, and that advance of human intelligence, foretold thousands of years ago by the prophet upon the lonely plains of Palestine, " when many shall run to and fro upon the earth, " and knowledge shall be increased ?"

Note.—Since reading this paper before the Society my attention has been called to an article on French railways in the " Revue des " Deux Mondes," of 1st Jan., 1866, by M. Lavollée, which, written many months previously, confirms most strikingly my conclusions, especially those which relate to the effect of railways on French commerce and on the welfare of the working classes. It adds many eloquent reflections on railways in relation to civilization and progress, which are well worth perusal.

In the discussion which followed the reading of my paper, the President expressed a wish that I should add information respecting fares and rates, and other points connected with railway working. But I find the subject too extensive for a cursory notice, and the forthcoming Evidence and Report of the Royal Commission on Railways will afford opportunity and material for a more complete survey, which, I trust, will be undertaken by some member of the Society connected with railways.

STATISTICS *of* METROPOLITAN *and* PROVINCIAL GENERAL HOSPITALS *for* 1865.

FIVE years have now elapsed since the meeting at Guy's Hospital, to which these returns owe their origin; and this, the fifth report, presents, for the principal London hospitals, and for several provincial ones, the leading facts relating to the mortality of these important institutions in the year 1865.

On referring to former reports, it will be seen that, while returns, more or less complete, were obtained for the fourteen general hospitals of the metropolis in 1861, from twelve in 1862, from eleven in 1863, and from nine in 1864; ten hospitals furnished returns in 1865.

Only fifteen provincial hospitals have responded to the circular letters of the Statistical Society, by returning the printed forms, more or less completely filled up. Of these fifteen hospitals, only six have furnished returns for each of the four years comprised in the tables. Of the remainder, one (the Hull General Infirmary) has sent in three returns; five (York County, Taunton and Somerset, Bath United, Northampton General, and Liverpool Royal) two each; and two (Isle of Wight and Wolverhampton) one each. The six hospitals which have supplied returns for four successive years, are the Devonshire, Norfolk and Norwich, Stockport Infirmary, Cheltenham, and Leicester.

The facts, for the general hospitals of the metropolis, published in the first report were rendered complete by inserting for the Middlesex Hospital the figures furnished to the Statistical Department of the Board of Trade; but no direct returns have been obtained from that hospital for any of the five years embraced in these reports. From information recently received, it is inferred that this omission will be supplied in future years. University College Hospital, which gave in its return in 1861, has withheld its contribution in subsequent years; Charing Cross Hospital has made no return for two years, the Great Northern for three years, while the Metropolitan Free Hospital, which sent in no return for 1864, has forwarded its return for 1865.

It is probable, therefore, that we may reckon on receiving returns from nine or ten out of the fourteen general hospitals of the metropolis, and from a somewhat larger number of provincial hospitals. As, however, the returns are, and will probably continue to be, incomplete, and as they occupy some space in this *Journal*, it may become a subject for consideration with the Council whether in future a more simple form of return may not be devised, and a shorter abstract be conveniently substituted for the longer one hitherto published. It is also reasonable to expect that, by the issue of a more simple printed form, a larger number of returns may be procured. If the Council of the Statistical Society shall see fit to authorise any change in this respect, it will be duly announced to the contributors by printed circular.

Meanwhile Dr. Guy, one of the honorary secretaries of this Society, has undertaken to prepare a paper based on the reports of the five years, 1861-65; and it is probable that the consideration which must thus be given to the subject may lead to the suggestion of some improvements in the forms and returns.

Of the general character of the report for 1865, it may suffice to observe, that the high rate of mortality which prevailed in the metropolitan hospitals during the year 1864 has not been maintained, but that, as a general rule, the deaths have fallen to the more moderate standard of 1863.

⁂ Resolution of the meeting held at Guy's Hospital, 21st June, 1861, slightly abbreviated :—

1. That the metropolitan hospitals should adopt one uniform system of registration of patients.

2. That at every metropolitan hospital, there be kept one or more books, which shall comprise the following particulars relating to the patients :—the Age, Sex, Social Relation (Mar., Single, Wid.), Occupation, Name of Disease, or Injury, Date of Admission and Discharge, Result, Days in Hospital, and a column for remarks.

3. That those hospitals which have not yet adopted a system of registration embracing the above particulars, are recommended to employ a register book containing all the annexed particulars in printed columns :—

Number of Patient. | Date of Admission. | Name. | Residence (Street and Parish). | Medical Officer. | Ward. | Age. | Male. | Female. | Soc. Relat. (M. S. W.) | Occupation. | Name of Disease or Injury. | Date of Discharge. | Result. | Days in Hospital. | Remarks.

And that the first set of headings commencing with "Number," and terminating with "Ward," be printed on the left hand page, and that the remainder be placed on the right hand page of the Register; and also that each page of the register book be ruled to contain either 25, 50, or 100 horizontal lines, each line to give the particulars of an individual case.

4. That as far as practicable in the column of the register book headed Disease or Injury, the nomenclature employed by the Registrar-General be adopted, with the additions contained in the forms submitted by Miss Nightingale to the International Statistical Congress.

5. That the Council of the *Statistical Society* having kindly undertaken to publish in their *Journal* some of the leading statistics of the metropolitan hospitals, if provided annually with the necessary information, the authorities of the several metropolitan hospitals be requested, at the close of each year, to draw up and communicate to that Society a summary of the statistics of the hospital for the year; such summary to comprise the data tabulated in the manner represented on the accompanying form.

6. That it be suggested to the authorities of the several metropolitan hospitals, that it will be of great public advantage if they will also publish annually a full report of the statistics of disease treated within the hospital, following, as far as practicable, the arrangement and nomenclature employed by the Registrar-General and by Miss Nightingale in the paper referred to in the third resolution.

7. That in the opinion of this meeting, it is essential that there should be in every hospital an officer charged specially with the duty of attending to the registration of patients.

METROPOLITAN

TABLE I.—*General Results.* (*No distinction*

Hospital.	*Remaining 1st January,* 1865.	Admitted during the Year.	Total.	Discharged Well or Convalescent.	Relieved.
	No.	No.	No.	No.	No.
St. Bartholomew's	540	5,585	6,125	4,421	—
Guy's	509	5,206	5,715	2,622	1,633
St. Thomas's (temporary)	189	1,923	2,112	1,192	443
London	385	4,317	4,702	1,691	1,977
St. George's	310	3,736	4,046	1,389	1,761
Middlesex	—	—	—	—	—
St. Mary's	151	1,730	1,881	897	552
Westminster	163	1,862	2,025	1,700	—
King's College	117	1,567	1,684	790	450
University	—	—	—	—	—
Royal Free	89	1,415	1,504	714	533
Charing Cross	—	—	—	—	—
Metropolitan Free	11	178	189	84	63
Great Northern	—	—	—	—	—
Totals (*so far as returned*)	2,464	27,519	29,983	15,500	7,412

TABLE II.—*Medical and Surgical*

Hospital.	Medical Wards.					
	Remaining 1st January, 1865.	Admitted during the Year.	Total.	Discharged.	Died.	*Remaining 1st January,* 1866.
	No.	No.	No.	No.	No.	No.
St. Bartholomew's	213	2,081	2,294	1,705	374	215
Guy's	195	1,917	2,112	1,610	297	205
St.Thomas's (tempy.)	78	852	930	746	108	76
London	112	1,176	1,288	1,014	164	110
St. George's	117	1,673	1,790	1,425	232	133
Middlesex	—	—	—	—	—	—
St. Mary's	68	762	830	638	126	66
Westminster	—	—	—	—	—	—
King's College	69	877	946	737	140	55
University	—	—	—	—	—	—
Royal Free	22	328	350	274	54	22
Charing Cross	—	—	—	—	—	—
Metropolitan Free	7	93	100	85	9	6
Great Northern	—	—	—	—	—	—
Totals (*so far as returned*)	881	9,759	10,640	8,234	1,504	888

HOSPITALS, 1865.

of Sex; nor of Medical or Surgical Cases.)

Unrelieved.	Discharged for Special Reasons.	Died.	*Remaining 1st January,* 1866.	Brought in Dead.	Hospital.
No.	No.	No.	No.	No.	
254	356	567	527	16	St. Bartholomew's
400	71	488	501	10	Guy's
88	—	195	193	1	St. Thomas's (tempy.)
22	251	384	377	23	London
199	—	364	333	—	St. George's
—	—	—	—	—	Middlesex
19	79	183	142	9	St. Mary's
—	—	172	153	9	Westminster
73	67	187	111	15	King's College
—	—	—	—	—	University
42	10	109	89	7	Royal Free
—	—	—	—	—	Charing Cross
4	11	10	16	1	Metropolitan Free
—	—	—	—	—	Great Northern
1,101	845	2,659	2,442	91	Totals (*so far as returned*)

Cases, without distinction of Sex.

Surgical Wards.						Hospital.
Remaining 1st January, 1866.	Admitted during the Year.	Total.	Discharged.	Died.	*Remaining 1st January,* 1866.	
No.	No.	No.	No.	No.	No.	
327	3,504	3,831	3,326	193	312	St. Bartholomew's
314	3,289	3,603	3,116	191	296	Guy's
111	1,071	1,182	977	88	117	St. Thomas's (tem.)
273	3,141	3,414	2,927	220	267	London
193	2,063	2,256	1,924	132	200	St. George's
—	—	—	—	—	—	Middlesex
83	968	1,051	909	66	76	St. Mary's
—	—	—	—	—	—	Westminster
48	690	738	643	47	56	King's College
—	—	—	—	—	—	University
67	1,080	1,147	1,025	55	67	Royal Free
—	—	—	—	—	—	Charing Cross
4	85	89	77	1	11	Metropolitan Free
—	—	—	—	—	—	Great Northern
1,420	15,891	17,311	14,924	993	1,402	Totals (*so far as returned*)

TABLE III.—*Average Number of Patients and Mean Residence.*

Hospital.	All Cases.				Medical Cases.				Surgical Cases.			
	Average Number Resident.			Mean Residence.	Average Number Resident.			Mean Residence.	Average Number Resident.			Mean Residence.
	Males.	Females.	Total.		Males.	Females.	Total.		Males.	Females.	Total.	
	No.	No.	No.	Days.	No.	No.	No.	Days.	No.	No.	No.	Days.
St. Bartholomew's	282	267	549	31	103	123	226	36	179	144	323	25
Guy's	300	201	501	32	105	93	198	34	195	108	303	31
St. Thomas's	—	—	189	36	—	—	—	—	—	—	—	—
London	212	123	365	31	58	48	106	33	184	75	259	30
St. George's	—	—	312	28	—	—	123	25	—	—	188	30
Middlesex	—	—	—	—	—	—	—	—	—	—	—	—
St. Mary's	76	47	123	27	30	34	64	29	47	29	76	26
Westminster	—	—	—	—	—	—	—	—	—	—	—	—
King's College	—	—	—	—	—	—	—	—	—	—	—	—
University	—	—	—	—	—	—	—	—	—	—	—	—
Royal Free	38	45	83	22	3	11	20	23	28	35	63	21
Charing Cross	—	—	—	—	—	—	—	—	—	—	—	—
Metropolitan Free	6	7	13	24	2	4	6	21	4	3	7	31
Great Northern	—	—	—	—	—	—	—	—	—	—	—	—
Totals (*so far as returned*)	944	690	2,135	Average 28·9	307	313	743	Average 28·7	637	394	1,219	Average 28·1

TABLE IV.—*Rate of Mortality.*

Hospital.	All Cases.			Medical Cases.			Surgical Cases.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.
St. Bartholomew's	9·9	8·5	9·2	19·2	13·6	16·3	5·3	4·6	5·0
Guy's	10·3	7·7	9·3	19·8	10·6	15·6	6·0	5·2	5·8
St. Thomas's	—	—	10·2	—	—	—	—	—	—
London	9·5	7·7	8·9	16·8	10·2	13·9	7·3	6·1	7·0
St. George's	9·9	7·8	8·9	15·5	10·1	12·9	5·9	5·8	5·3
Middlesex	—	—	—	—	—	—	—	—	—
St. Mary's	11·0	7·8	9·7	19·0	11·0	14·8	6·6	3·9	5·7
Westminster	—	—	—	—	—	—	—	—	—
King's College	12·7	10·9	11·9	18·8	12·9	15·8	6·7	6·9	6·8
University	—	—	—	—	—	—	—	—	—
Royal Free	9·2	6·1	7·3	18·0	13·1	15·4	6·7	3·0	4·9
Charing Cross	—	—	—	—	—	—	—	—	—
Metropolitan Free	9·0	1·5	5·2	14·5	3·5	9·0	3·0	—	1·5
Great Northern	—	—	—	—	—	—	—	—	—
Average (*so far as returned*)	—	—	9·0	—	—	14·2	—	—	5·3

⁂ TABLE IV.—The death-rate in this and the corresponding table of former reports is generally that stated in the returns themselves; but when not so stated, it has been computed thus:

$$\frac{\text{Annual deaths}}{\text{Annual admissions + patients at the beginning of year − those at the end of the year}}$$

TABLE V.—*Admissions and Deaths in General and Special Wards.*

Hospital.	General Wards. (Medical and Surgical.)			Special Wards.		General and Special Wards.		
	Admitted.	Died.	Rate of Mortality.	Admitted.	Died.	Admitted	Died.	Rate of Mortality.
	No.	No.	Per cnt.	No.	No.	No.	No.	Per cnt.
St. Bartholomew's	5,217	553	10·60	908	14	6,125	567	9·26
Guy's	4,195	474	11·29	1,011	14	5,206	488	9·37
St. Thomas's	1,923	196	10·19	—	—	1,923	196	10·19
London	4,317	384	8·89	No accou	nt kept	4,317	384	8·89
St. George's	—	—	—	—	—	—	—	—
Middlesex	—	—	—	—	—	—	—	—
St. Mary's	1,788	180	10·07	93	3	1,881	183	9·73
Westminster	1,862	172	9·24	None	None	1,862	172	9·24
King's College*	1,567	186	11·87	95	1	1,662	187	11·25
University	—	—	—	—	—	—	—	—
Royal Free	—	—	—	—	—	—	—	—
Charing Cross	—	—	—	—	—	—	—	—
Metropolitan Free	189	10	5·29	None	None	189	10	5·29
Great Northern	—	—	—	—	—	—	—	—
Average (*so far as returned*)	21,058	2,155	Average 9·68	2,107	32	23,165	2,187	Average 9·15

* The 95 cases in the special wards consist of 79 cases in the ward for diseases of women and children, and 16 cases in the eye wards opened during the year. The confinements of women in the Nightingale ward and the births of children, amounting respectively to 166 and 167, are not comprised in any of the tables.

ADDITIONAL TABLE.—*Rate of Mortality in the General Wards for the Years* 1861, 1862, 1863, 1864, *and* 1865.

Hospital.	1861.	1862.	1863.	1864.	1865.
	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.
St. Bartholomew's	12·3	12·5	11·7	12·7	11·7
Guy's	11·2	11·8	11·2	11·8	11·3
St. Thomas's (temporary)	9·8	8·8	10·4	12·4	10·2
London	8·4	7·7	8·8	10·5	8·9
St. George's	8·7	8·4	8·3	8·6	9·9
Middlesex	11·6	—	—	—	—
St. Mary's	10·9	10·0	10·3	9·9	10·9
Westminster	9·9	10·4	9·0	10·7	9·2
King's College	11·1	10·1	12·9	16·0	12·6
University	11·6	—	—	—	—
Royal Free	6·7	7·3	6·5	7·3	7·7
Charing Cross	8·4	8·6	7·9	—	—
Metropolitan Free	7·1	5·3	10·9	—	5·8
Great Northern	8·3	4·2	—	—	—
Average (*so far as returned*)	9·7	8·8	9·9	11·1	9·8

⁂ ADDITIONAL TABLE.—The rates of mortality in this table have been calculated afresh from the data supplied by the several hospitals.

COUNTY

Table (I).—*General Results.* (*No distinction*

Hospital.	*Remaining 1st January,* 1865.	Admitted during the Year.	Total.	Discharged Well or Convalescent.	Relieved.
	No.	No.	No.	No.	No.
York County	—	—	—	—	—
Devonshire (Buxton, Derbyshire)	15	1,077	1,092	108	851
Norfolk and Norwich	92	889	981	766	—
Taunton and Somerset	60	825	885	720	—
Bath United	56	1,152	1,208	639	308
Stockport (infirmary)	27	313	340	241	46
Gloucester „	60	601	661	220	271
Royal Isle of Wight (infirmary)	—	—	—	—	—
West Sussex, East Hants, and Chichester (infirmary)	—	—	—	—	—
Hull General (infirmary)	119	1,085	1,204	680	181
Cheltenham (infirmary)	71	482	553	318	98
Leicester „	135	1,183	1,318	900	118
Wolverhampton „	—	—	—	—	—
Northampton General „	110	1,089	1,199	650	311
Liverpool Royal „	234	3,373	3,607	2,534	409
Totals (*so far as returned*)	979	12,069	13,048	7,776	2,593

Table (II).—*Medical and Surgical*

Hospital.	Medical Wards.					
	Remaining 1st January, 1865.	Admitted during the Year.	Total.	Discharged.	Died.	*Remaining 1st January,* 1866.
	No.	No.	No.	No.	No.	No.
York County	—	—	—	—	—	—
Devonshire (Buxton, Derbyshire)	—	—	—	—	—	—
Norfolk and Norwich	32	374	406	351	17	38
Taunton and Somerset	—	—	—	—	—	—
Bath United	19	638	657	509	74	55
Stockport (infirmary)	13	52	65	52	9	4
Gloucester „	27	204	231	193	11	27
Royal Isle of Wight (infirmary)	—	—	—	—	—	—
West Sussex, East Hants, and Chichester (infirmary)	—	—	—	—	—	—
Hull General (infirmary)	45	475	520	436	41	43
Cheltenham (infirmary)	34	187	221	183	9	29
Leicester „	—	—	—	—	—	—
Wolverhampton „	—	—	—	—	—	—
Northampton General „	—	—	—	—	—	—
Liverpool Royal „	84	1,256	1,340	1,142	108	90
Totals (*so far as returned*)	254	3,186	3,440	2,866	269	286

HOSPITALS, 1865.

of Sex; nor of Medical or Surgical Cases.)

Unrelieved.	Discharged for Special Reasons.	Died.	*Remaining 1st January,* 1866.	Brought in Dead.	Hospital.
No.	No.	No.	No.	No.	
—	—	—	—	—	York County
89	26	3	15	—	Devonshire (Buxton, Derbyshire)
71	—	56	88	—	Norfolk and Norwich
82	—	17	66	—	Taunton and Somerset
—	—	107	98	—	Bath United
—	—	24	27	2	Stockport (infirmary)
8	59	23	77	3	Gloucester „
—	—	—	—	—	Royal Isle of Wight (infirmary)
—	—	—	—	—	West Sussex, East Hants, and Chichester (infirmary)
82	77	77	107	—	Hull General (infirmary)
10	39	19	69	—	Cheltenham (infirmary)
7	41	84	168	—	Leicester „
—	—	—	—	—	Wolverhampton „
8	58	67	105	—	Northampton General „
—	56	204	244	—	Liverpool Royal „
357	356	681	1,064	5	Totals (*so far as returned*)

Cases, without distinction of Sex.

Surgical Wards.						Hospital.
Remaining 1st January, 1865.	Admitted during the Year.	Total.	Dis-charged.	Died.	*Remaining 1st January,* 1866.	
No.	No.	No.	No.	No.	No.	
—	—	—	—	—	—	York County
—	—	—	—	—	—	Devonshire (Buxton, Derbyshire)
60	515	575	492	31	52	Norfolk and Norwich
—	—	—	—	—	—	Taunton and Somerset
37	514	551	438	33	43	Bath United
14	261	275	231	15	29	Stockport (infirmary)
33	397	430	368	12	50	Gloucester „
—	—	—	—	—	—	Royal Isle of Wight (infirmary)
—	—	—	—	—	—	West Sussex, East Hants, and Chichester (infirmary)
74	610	684	584	36	64	Hull General (infirmary)
37	295	332	282	10	40	Cheltenham (infirmary)
—	—	—	—	—	—	Leicester „
—	—	—	—	—	—	Wolverhampton „
—	—	—	—	—	—	Northampton General „
150	2,117	2,267	2,017	96	154	Liverpool Royal „
405	4,709	5,114	4,412	233	432	Totals (*so far as returned*)

Table (III).—*Average Number of Patients and Mean Residence.*

Hospital.	All Cases.				Medical Cases.				Surgical Cases.			
	Average Number Resident.			Mean Residence.	Average Number Resident.			Mean Residence.	Average Number Resident.			Mean Residence.
	Males.	Females	Total.		Males.	Females.	Total.		Males.	Females.	Total.	
	No.	No.	No.	Days.	No.	No.	No.	Days.	No.	No.	No.	Days.
York County	—	—	—	—	—	—	—	—	—	—	—	—
Devonshire (Buxton, Derbyshire)	—	—	66	22	—	—	—	—	—	—	—	—
Norfolk and Norwich	—	—	114	43	—	—	—	—	—	—	—	—
Taunton and Somerset	—	—	—	—	—	—	—	—	—	—	—	—
Bath United	—	—	83	—	—	—	—	—	—	—	—	—
Stockport (infirmary)	—	—	23	24	—	—	—	22	—	—	—	—
Gloucester "	47	24	71	40	73	10	83	37	34	14	48	41
Royal Isle of Wight (infirmary)	—	—	—	—	—	—	—	—	—	—	—	—
West Sussex, East Hants, and Chichester (infirmary)	—	—	—	—	—	—	—	—	—	—	—	—
Hull General "	72	30	102	33	26	13	39	25	46	17	63	41
Cheltenham (infirmary)	28	31	59	39	9	14	23	40	18	16	34	38
Leicester "	—	—	—	25	—	—	—	—	—	—	—	—
Wolverhampton "	—	—	—	—	—	—	—	—	—	—	—	—
Northampton General	—	—	114	38	—	—	—	—	—	—	—	—
Liverpool Royal	—	—	235	—	—	—	88	—	—	—	147	—
Totals (*so far as returned*)	147	85	867	Average 33	108	37	233	Average 31	98	17	292	Average 40

Table (IV).—*Rate of Mortality.*

Hospital.	All Cases.			Medical Cases.			Surgical Cases.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females	Total.
	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.
York County	—	—	—	—	—	—	—	—	—
Devonshire (Buxton, Derbyshire)	—	—	·3	—	—	—	—	—	—
Norfolk and Norwich	—	—	—	—	—	—	—	—	—
Taunton and Somerset	—	—	—	—	—	—	—	—	—
Bath United	5·9	3·4	4·6	3·4	3·0	3·2	2·4	·4	1·4
Stockport (infirmary)	8·9	5·0	7·0	22·7	13·3	17·3	7·3	1·0	5·7
Gloucester "	3·6	3·1	3·4	5·1	4·1	4·7	2·9	2·4	2·7
Royal Isle of Wight (infirmary)	—	—	—	—	—	—	—	—	—
West Sussex, East Hants, and Chichester (infirmary)	—	—	—	—	—	—	—	—	—
Hull General (infirmary)	7·8	4·8	7·0	9·5	6·4	8·6	6·6	3·2	5·8
Cheltenham (infirmary)	4·3	1·3	2·8	5·2	3·8	4·5	4·2	·3	2·2
Leicester "	—	—	—	—	—	—	—	—	—
Wolverhampton "	—	—	—	—	—	—	—	—	—
Northampton General "	8·1	3·1	5·6	—	—	—	—	—	—
Liverpool Royal "	—	—	—	—	—	—	—	—	—
Average (*so far as returned*)	—	—	4·4	—	—	7·7	—	—	3·6

⁂ *Table* IV.—See note to Table IV, *ante*.

Table (V).—*Admissions and Deaths in General and Special Wards.*

Hospital.	General Wards. (Medical and Surgical.)			Special Wards.		General and Special Wards.		
	Admitted.	Died.	Rate of Mortality.	Admitted.	Died.	Admitted.	Died.	Rate of Mortality.
	No.	No.	Per cnt.	No.	No.	No.	No.	Per cnt.
York County	817	32	3·92	38	Nil	855	32	3·74
Devonshire (Buxton, Derbyshire)	1,092	3	·27	Nil	Nil	1,092	3	·27
Norfolk and Norwich	981	56	5·71	Nil	Nil	981	56	5·71
Taunton and Somerset	885	17	1·92	Nil	Nil	885	17	1·92
Bath United	1,152	107	9·28	Nil	Nil	1,152	107	9·28
Stockport (infirmary)	327	24	7·33	13	Nil	340	24	7·06
Gloucester "	661	23	3·48	Nil	Nil	661	23	3·48
Royal Isle of Wight (infirmary)	—	—	—	—	—	—	—	—
West Sussex, East Hants, and Chichester (infirmary)	—	—	—	—	—	—	—	—
Hull General (infirmary)	1,085	77	7·10	Nil	Nil	1,085	77	7·10
Cheltenham (infirmary)	553	19	3·43	Nil	Nil	553	19	3·43
Leicester "	1,318	84	6·37	Nil	Nil	1,318	84	6·37
Wolverhampton "	—	—	—	—	—	—	—	—
Northampton General "	1,089	67	6·15	Nil	Nil	1,089	67	6·15
Liverpool Royal "	3,607	204	5·77	Nil	Nil	3,607	204	5·77
Totals (*so far as returned*)	13,567	713	Average 5·06	51	—	13,618	713	Average 5·02

Additional Table.—*Rate of Mortality in the General Wards for the Years* 1862, 1863, 1864, *and* 1865.

Hospital.	1862.	1863.	1864.	1865.
	Per cnt.	Per cnt.	Per cnt.	Per cnt.
York County	6·6	3·4	—	—
Devonshire (Buxton, Derbyshire)	·1	·2	·1	·3
Norfolk and Norwich	4·7	4·5	5·2	6·3
Taunton and Somerset	2·2	—	—	—
Bath United	—	—	8·2	9·6
Stockport (infirmary)	8·3	10·3	10·3	8·0
Gloucester "	5·1	3·8	4·9	3·9
Royal Isle of Wight (infirmary)	5·3	—	—	—
West Sussex, East Hants, and Chichester (infirmary)	6·3	—	—	—
Hull General (infirmary)	7·1	—	6·7	7·0
Cheltenham (infirmary)	2·8	3·6	5·0	3·9
Leicester "	6·2	—	4·1	7·3
Wolverhampton "	9·3	—	—	—
Northampton General (infirmary)	—	—	4·5	—
Liverpool Royal (infirmary)	—	—	6·0	6·1
Average (*so far as returned*)	5·3	4·3	5·5	5·8

⁂ See note to Additional Table, *ante*.

An Analysis *with* Percentages, *of the* "Summary *of* Wrecks *and* Casualties *the* Statistical Committee *of* Lloyd's. *Tabulated by* Henry Jeul

1866.	Number of Vessels to which Casualties Occurred.	Number of Casualties.	Nature of							
			Missing.	Abandoned.			Collision.			
				Total.	Recovered.	Lost.	Total.	Not Damaged, or Results Unknown.	Damaged.	Sunk.
January—										
Ships	1,678	1,988	10	70	13	57	258	36	198	24
Percentages	—	—	·5	3·52	·65	2·87	12·97	1·81	9·96	1·20
Steamers....	133	149	—	2	—	2	34	14	16	4
Percentages	—	—	—	1·34	—	1·34	22·82	9·39	10·75	2·68
Total	1,811	2,137	10	72	13	59	292	50	214	28
Percentages	—	—	·46	3·36	·60	2·76	13·66	2·34	10·01	1·31
February—										
Ships	903	1,029	13	28	6	22	173	33	126	14
Percentages	—	—	1·26	2·72	·58	2·14	16·81	3·21	12·24	1·36
Steamers....	91	101	—	1	1	—	24	14	7	3
Percentages	—	—	—	·99	·99	—	23·76	13·86	6·93	2·97
Total	994	1,130	13	29	7	22	197	47	133	17
Percentages	—	—	1·16	2·56	·62	1·94	17·43	4·16	11·77	1·50
March—										
Ships	913	1,016	18	28	9	19	170	33	128	9
Percentages	—	—	1·77	2·75	·89	1·86	16·73	3·24	12·60	·89
Steamers....	93	95	—	1	—	1	24	10	13	1
Percentages	—	—	—	1·06	—	1·06	25·26	10·52	13·68	1·06
Total	1,006	1,111	18	29	9	20	194	43	141	10
Percentages	—	—	1·62	2·61	·81	1·80	17·46	3·87	12·69	·90
First Quarter										
Ships	3,494	4,033	41	126	28	98	601	102	452	47
Percentages	—	—	1·01	3·13	·69	2·44	14·90	2·53	11·21	1·16
Steamers....	317	345	—	4	1	3	82	38	36	8
Percentages	—	—	—	1·16	·29	·87	23·76	11·01	10·43	2·32
Total	3,811	4,378	41	130	29	101	683	140	488	55
Percentages	—	—	·94	2·97	·67	2·30	15·60	3·20	11·14	3·60

reported in 'Lloyd's List' *from* January *to* March *inclusive* 1866," *issued by* F.R.L.S., F.S.S., *&c., Honorary Secretary to the Statistical Committee of Lloyd's.*

Accident.

Sinking from causes other than Collision.	Stranded.				Capture.	Piracy.	Burnt or on Fire.	Dismasted or Disabled.	Jettison of Cargo Under Deck.	Jettison of Deckload, or Washing Overboard.
	Total.	Got Off.	Not Got Off.	Sub-sequent Fate not Reported.						
72	518	241	179	98	—	1	11	48	33	37
3·62	26·05	12·12	9·0	4·93	—	·05	·55	2·42	1·66	1·86
6	26	12	7	7	—	—	—	1	2	7
4·03	17·45	8·05	4·70	4·70	—	—	—	·67	1·34	4·70
78	544	253	186	105	—	1	11	49	35	44
3·65	25·45	11·84	8·70	4·91	—	·05	·52	2·29	1·63	2·08
27	220	114	77	29	—	1	11	22	8	22
2·62	21·39	11·08	7·48	2·81	—	·10	1·08	2·14	·78	2·14
3	17	13	2	2	—	—	2	—	—	4
2·97	16·83	12·87	1·98	1·98	—	—	1·98	—	—	3·96
30	237	127	79	31	—	1	13	22	8	26
2·65	20·97	11·24	6·99	2·74	—	·09	1·16	1·94	·71	2·30
46	294	177	74	43	11	5	17	10	18	10
4·52	28·93	17·42	7·28	4·23	1·09	·50	1·67	·99	1·78	·99
4	29	19	2	8	1	—	1	—	1	2
4·21	30·52	20·0	2·10	8·42	1·06	—	1·06	—	1·06	2·10
50	323	196	76	51	12	5	18	10	19	12
4·50	29·08	17·65	6·84	4·59	1·08	·45	1·62	·90	1·71	1·08
145	1,032	532	330	170	11	7	39	80	59	69
3·59	25·58	13·19	8·18	4·21	·27	·17	·96	1·98	1·46	1·72
13	72	44	11	17	1	—	3	1	3	13
3·76	20·87	12·76	3·19	4·92	·29	—	·87	·29	·87	3·76
158	1,104	576	341	187	12	7	42	81	62	82
3·60	25·23	13·15	7·81	4·27	·28	·17	·96	1·85	1·41	1·87

An Analysis with Percentages, of the "Summary of Wrecks and Casualtie

1866.	Nature of Accident.						Resu	
	Leaky.	Loss of Anchors or Chains.	Machinery Damaged, or Short of Coals.	Mutiny, Sickness, Casualty to Crew, or Refusing Duty.	Ship Damaged, Loss of Sails, Bulwarks, &c.	Water-logged.	Total Loss.	Con-structive Loss.
January—								
Ships	172	248	—	68	433	9	301	57
Percentages	8·66	12·48	—	3·42	21·79	·45	17·94	3·39
Steamers	6	6	30	1	28	—	15	2
Percentages	4·03	4·03	20·13	·67	18·79	—	11·28	1·51
Total	178	254	30	69	461	9	316	59
Percentages	8·33	11·89	1·40	3·22	21·58	·43	17·46	3·25
February—								
Ships	111	104	—	37	248	4	146	19
Percentages	10·78	10·10	—	3·59	24·10	·39	16·16	2·10
Steamers	3	4	24	3	16	—	8	1
Percentages	2·97	3·96	23·76	2·97	15·85	—	8·79	1·10
Total	114	108	24	40	264	4	154	20
Percentages	10·08	9·55	2·13	3·55	23·36	·36	15·49	2·02
March—								
Ships	118	65	—	18	187	1	174	24
Percentages	11·61	6·39	—	1·78	18·40	·10	19·05	2·63
Steamers	4	—	20	2	6	—	8	1
Percentages	4·21	—	21·05	2·10	6·31	—	8·60	1·08
Total	122	65	20	20	193	1	182	25
Percentages	10·98	5·85	1·80	1·80	17·37	·09	18·09	2·48
First Quarter								
Ships	401	417	—	123	868	14	621	100
Percentages	9·95	10·35	—	3·06	21·53	·34	17·78	2·86
Steamers	13	10	74	6	50	—	31	4
Percentages	3·76	2·89	2·45	1·73	14·49	—	9·78	1·24
Total	414	427	74	129	918	14	652	104
Percentages	9·45	9·75	1·69	2·94	20·96	·33	17·11	2·73

reported in 'Lloyd's List' *from January to March inclusive* 1866"—*Contd.*

to Ship.				Results to Cargo as far as Reported.							
Great Damage.	Minor Damage.	Raised after Sinking.	Not Damaged, or Results Unknown.	All Lost.	Part Lost.	All Saved.	Forwarded.	Heated.	Shifted.	Otherwise Damaged.	Salvage Services.
196 11·68	844 50·30	13 ·77	267 15·92	250 14·89	136 8·10	18 1·07	10 ·59	7 ·41	33 1·96	25 1·49	281 16·74
12 9·02	56 42·10	2 1·51	46 34·58	6 4·51	8 6·01	1 ·75	2 1·51	— —	4 3·0	5 3·76	5 3·76
208 11·48	900 49·70	15 ·82	313 17·29	256 14·13	144 7·95	19 1·04	12 ·66	7 ·38	37 2·04	30 1·65	286 15·79
140 15·51	451 49·95	3 ·33	144 15·95	133 14·72	33 3·65	6 ·66	5 ·55	3 ·33	12 1·32	22 2·43	101 11·18
9 9·89	39 42·86	1 1·10	33 36·26	2 2·19	5 5·49	1 1·10	2 2·19	— —	1 1·10	3 3·29	14 15·38
149 14·99	490 49·29	4 ·41	177 17·80	135 13·58	38 3·82	7 ·70	7 ·70	3 ·30	13 1·30	25 2·51	115 11·57
94 10·29	438 47·98	1 ·12	182 19·93	151 16·53	51 5·58	8 ·88	7 ·77	1 ·12	11 1·21	24 2·63	137 15·0
4 4·30	44 47·31	— —	36 38·71	6 6·45	7 7·52	— —	1 1·07	— —	— —	10 10·75	9 9·68
98 9·74	482 47·91	1 ·10	218 21·68	157 15·60	58 5·76	8 ·79	8 ·79	1 ·10	11 1·09	34 3·38	146 14·51
430 12·30	1,733 49·60	17 ·48	593 16·98	534 15·28	220 6·29	32 ·91	22 ·63	11 ·32	56 1·60	71 2·03	519 14·85
25 7·88	139 43·86	3 ·94	115 36·28	14 4·14	20 6·31	2 ·63	5 1·57	— —	5 1·57	18 5·68	28 8·83
455 11·93	1,872 49·13	20 ·52	708 18·58	548 14·38	240 6·29	34 ·89	27 ·70	11 ·28	61 1·60	89 2·33	547 14·35

BRITISH ASSOCIATION, 1866.

THIRTY-SIXTH *Meeting of the* BRITISH ASSOCIATION *for the Advancement of Science, held at* NOTTINGHAM, *22nd—29th August*, 1866.

Section F.—*Economic Science and Statistics.*

President.—PROFESSOR J. E. T. THOROLD ROGERS, M.A.

Vice-Presidents.—Lord Belper, Sir John Bowring, F.R.S.; William Farr, M.D., D.C.L., F.R.S.; William Felkin, F.L.S.; James Heywood, M.A., F.R.S.; Colonel Sykes, M.P., F.R.S.

Secretaries.—R. Birkin, junr.; Professor Leone Levi, F.S.A., F.S.S.; Edmund Macrory, M.A.

Committee.—Samuel Brown; Rev. W. Caine; William Camps, M.D.; William Enfield; F. P. Fellowes; Lord Houghton; W. Thomas Newmarch; the Mayor of Nottingham; Charles Paget; George Senior; Henry Yates Thompson; Samuel Timmins; Alderman Vickers; Joseph White; Robert Wilkinson; Professor A. W. Williamson; James Yates.

The following Papers were read in the Section:—

Thursday, 23rd August, 1866.

The President's Opening Address.

Professor Leone Levi.—On the State and Prospects of the Rate of Discount with Reference to the Recent Monetary Crisis.

Free Trade in Banking in the Western States of America and Manchooria (Tartary), from statements of W. Wells Brown, and T. T. Meadows, Her Majesty's Consul at Newchang.—Communicated by Colonel Sykes, M.P., F.R.S.

Frederick J. Wilson.—On a National Bank, and Payment of the National Debt.

Friday, 24th August, 1866.

Professor A. W. Williamson.—Report of the Committee of the British Association on Scientific Evidence in Courts of Law.

Professor Leone Levi.—Report of the Committee of the British Association on Uniformity of Weights and Measures.

Joseph White, F.R.C.S. Ed., &c.—On the Statistics of the General Hospital near Nottingham.

Frederick J. Wilson.—On Classification of the various Occupations of the People.

Rev. W. Caine.—Some of the Results of the Free Licensing System in Liverpool during the last Four Years.

Saturday, 25*th August*, 1866.

The Section did not meet on this day.

Monday, 27*th August*, 1866.

James Heywood, F.R.S.—On the Subjects required in the Classical Tripos Examination, and in the Trinity College Fellowship Examination at Cambridge.

Dr. Daubeny.—Statistics as to the Number of Graduates in Arts and Medicine at Oxford for the Last Two Centuries.

E. Renals.—On the Influence of Science Classes in Mechanics' Institutions.

Tuesday, 28*th August*, 1866.

Colonel Sykes.—Statistics of the Charitable, Educational, Industrial, and Public Institutions Founded by the Native Gentry of India during the last Five Years.

Mr. Wilkinson.—On the Consumption and Cost of Intoxicating Liquors in the United Kingdom in 1865.

Mr. Felkin.—Statistics of the Hosiery and Lace Trades in Nottingham.

Rev. A. S. Worthington.—Remarks on the Unequal Proportion between the Male and Female Population of some Manufacturing and other Towns, with concurrent Phenomena shown by the Registrar-General's Returns.

Mr. George Senior.—On the Diminution of Accidents in Coal Mines since the Appointment of Government Inspectors.

Wednesday, 29*th August*, 1866.

Rev. C. Sewell.—On Hindrances to Success of Popular Education.

Mr. Thomas Browne.—On the Transfer of Real Property.

Mr. Charles Tebbutt.—On the Violation of the Principles of Economic Science caused by the Law of Distraint for Rent.

Mr. G. Bell Galloway.—On Inventors and Inventions.

Mr. Frederick Wilson.—On the Occupation and Ownership of Waste Lands.

Mr. J. G. Joyce.—On the Practicability of Employing a Common Notation for Electric Telegraphy.

PROCEEDINGS OF THE STATISTICAL SOCIETY.

Session 1865-66.

First Ordinary Meeting, Tuesday, 21*st November,* 1865.

Colonel W. H. Sykes, M.P., Vice-President, in the Chair.

The following Gentlemen were elected Fellows of the Society viz.:—

Sir John Lubbock, Bart., F.R.S.
F. Ives Scudamore, Esq.

The following Paper was read:—

" On the Original and Acquired Meaning of the term Statistics, " and on the Proper Functions of a Statistical Society: also on the " Question whether there is a Science of Statistics; and, if so, what " are its Nature and Objects, and what is its Relation to Political " Economy and Social Science." By Dr. Guy.

Second Ordinary Meeting, Tuesday, 19*th December,* 1865.

Colonel W. H. Sykes, M.P., Vice-President, in the Chair.

The following Gentlemen were elected Fellows of the Society, viz.:—

William W. Watson, Esq.
David Nasmith, Esq.
Henry Kühner, Esq.
George T. Ruck, Esq.
Charles H. Robarts, Esq.
Augustus Hendriks, Esq.
Charles Ratcliffe, Esq.
Joseph Tilston, Esq.
Robert Knight, Esq.

The following Paper was read:—

" On the Mortality of Children in the Different States of " Europe." By Dr. William Farr.

Third Ordinary Meeting, Tuesday, 16*th January,* 1866.

Colonel W. H. Sykes, M.P., Vice-President, in the Chair.

The following Gentlemen were elected Fellows of the Society viz.:—

Thomas Brown, Esq., junr.
W. C. McKenna, Esq.

The following Paper was read:—

" On French Population Statistics." By T. A. Welton.

Fourth Ordinary Meeting, Tuesday, 20*th February,* 1866.

Lord Houghton, President, in the Chair.

The following Gentlemen were elected Fellows of the Society, viz.:—

Francis Lovett Cotton, Esq.
William Gard, Esq.

The following Paper was read:—

"On the Organisation, Strength, and Cost of the French and "English Navies in 1865." By Colonel W. H. Sykes, M.P.

Fifth Ordinary Meeting, Tuesday, 20*th March,* 1866.

William Farr, Esq., M.D., in the Chair.

The following Gentlemen were elected Fellows of the Society, viz.:—

Démétrius Bikélas, Esq.	Charles Wentworth Dilke, Esq., LL.B.

The following Paper was read:—

"On the Statistical Progress of the Kingdom of Italy." By Samuel Brown.

Sixth Ordinary Meeting, Tuesday, 17*th April,* 1866.

Lord Houghton, President, in the Chair.

The following Gentlemen were elected Fellows of the Society, viz.:—

Joseph d'Aguilar Samuda, Esq., M.P.	William Cotton, Esq.

The following Paper was read:—

"On the Frequent Autumnal Pressure in the Money Market." By Professor W. S. Jevons, M.A.

Seventh Ordinary Meeting, Tuesday, 15*th May,* 1866.

Colonel W. H. Sykes, M.P., Vice-President, in the Chair.

The following Paper was read:—

"On the Budgets and Accounts of England and France." By Major-General Balfour, C.B.

Eighth Ordinary Meeting, Tuesday, 19*th June,* 1866.

William Farr, Esq., M.D., in the Chair.

The following Gentlemen were elected Fellows of the Society, viz.:—

Sir John Peter Grant, K.C.B.	William Henry Thomas, Esq.
Henry Bret Ince, Esq.	William Cooper Wilson, Esq.

The following Paper was read:—

"On the Economic Condition of the Highlands of Scotland." By the Duke of Argyll.

MISCELLANEA.

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I.—*English Tenant-Right.*

The following article appeared in the *Saturday Review* under the title of "Agricultural Customs:"—

"In the year 1848, a committee of the House of Commons presided over by the late Mr. Pusey collected evidence from almost every county in England upon the subject of agricultural customs, and the result of their labours was to show that there are as many customs as counties, or, indeed, considerably more. The report of this committee has lately been reprinted, for the sake probably of throwing light upon the tenant-right question of Ireland. It presents an interesting picture of the condition of agriculture in England immediately after the repeal of the corn law; and it is also valuable as showing that the demand for tenant-right, which was urged by many witnesses before this committee, amounts to a proposal to make good landlords by Act of Parliament.

"As all parts of this report possess nearly equal interest, we will take for example the first county which offers. It happens to be Berkshire, which is described by Mr. John Houghton. This witness occupied land in several counties to the extent of 4,000 acres. He owned a farm in Berkshire, part of Bagshot Heath, which was in a state of nature when he bought it. He had expended large sums of money upon it, and had made part of it bring good crops. The custom as to compensation as between outgoing and incoming tenants was entirely different in the adjoining counties of Berks and Surrey. 'Surrey is the most expensive county in England. I do not think any outgoing tenant could complain of Surrey. He is paid for his dressing and half dressing and clover-lay.' In Berkshire, on the other hand, 'the outgoing tenant is only paid for acts of husbandry.' He is not entitled to compensation for drainage or for 'chalking'—that is, spreading chalk over sand or clay-land. The crops are very deficient as compared with what they would be if the land were well drained and chalked. A tenant from year to year could not prudently undertake these operations; and even if landlords were willing to grant leases, it appears that at that time, when the corn law had recently been repealed, tenants were indisposed to take them. In Lincolnshire, which appears to be the model county, 'the tenants get allowances for their improvements;' and this is what the witnesses desire to see established in other counties. But the committee ask how this is to be done, and the witnesses answer this—which is the vital question—very imperfectly. In Lincolnshire, says Mr. Houghton, where tenant-right exists, great improvements have gone on. There was no compulsory law in that county to make landlords improve their property, but they have done it in the voluntary endeavour to accomplish the most they could for their own and the public good. 'In that county a very liberal tenant-right exists upon the voluntary principle.' The witness proposed that a yearly tenant should give notice to his landlord of intended improvements by draining, &c., with a view to charge the landlord or the land with the amount expended; and if the landlord dissented, then that some tribunal should decide as to the expediency of the proposed works. But, being asked whether he would take from the landlord the power of giving notice to quit, he answered, 'Certainly not.' Other witnesses were conducted by the committee, by slightly different roads, to the same result; and, on the whole, it appears that the evils complained of, which undoubtedly were very general and serious, could not be remedied by the legislature without an interference with the rights of property, which the witnesses themselves disclaimed all intention of recommending. Mr. Houghton was asked whether, as he wished a tribunal to regulate the terms of tenure, he would also limit the power of landlords to raise their rent; and again he answered, 'Certainly not.' He expressed very strongly his feeling of the necessity of having the inferior grass-lands of England broken up—a feeling which possibly subsequent experience may have modified—and he considered it proper for the legislature to say that such land should not be allowed to remain in a state of unproductiveness. But, said the committee, it might be thought that other owners of capital did not do the best with it, and would you like any tribunal to interfere with them? and if not, consider whether a landlord is not in the same category.

"Let us now see what was the state of things in the model county of Lincoln in 1848. Mr. Hesseltine told the committee that he occupied about 1,500 acres at Worlaby, in North Lincolnshire, of which 1,000 acres were arable, and the remainder grass. In 1812, when his father took this farm, it was in a very bad state of cultivation, only just broken up from heath, and not fit for growing corn. By chalking, this farm had become capable of bearing good crops of wheat and turnips. The crops of turnips were very good indeed, and the witness was able to winter upon his farm 2,500 sheep; whereas it would not before 1812 have kept above one-fourth of that number. This operation had been beneficial to a large tract of country from the Humber up to Louth. The land was generally held on yearly tenancy, and the tenants engaged in the large outlay required for chalking in reliance upon the security given to them by the custom of the country. The custom was that whatever money the tenant laid out in chalking should be divided over a period of seven years, and if he quitted the farm before the expiration of that period he would receive in proportion, according to the number of years unexpired. The custom also gave an allowance for bones used as manure. The effect of this manure was supposed to last three years, and if the tenant quitted before he had enjoyed the full benefit of it he was allowed a proportional compensation. There was also compensation for improving peat land by claying it. This process had been generally adopted on the fen lands, which had thereby been made capable of growing good crops of wheat. The benefit of claying was supposed to be exhausted in five years, and the compensation was regulated accordingly. There was also a customary allowance for oilcake purchased for cattle. It is supposed that one portion of the cake consumed on a farm is represented by beef and mutton, and the residue by manure, and for this latter portion the out-going tenant receives compensation. It is considered that a tenant is entitled to an allowance for the oilcake which he has given to his own stock, because 'it improves the manure so much; the better the stock is kept, the better the manure is.' The various improvements which were based upon the Lincolnshire tenant-right had increased the productiveness of the light soils to the extent of at least one-fourth, and rents had risen in proportion. It appears that the custom of tenant-right was of modern origin. The witness, being asked whether there was any custom in existence that would have secured to his father any payment under the head of chalking, claying, or bone manure, answered, 'There were not any customs then.' Improvements were generally made in the district between 1812 and 1826, but the agreements subsisting at the beginning of this period did not contain provisions for compensation, and these improvements 'took place antecedent to the customs.' The tenants either had confidence in those whom they held under, or the profit of farming was so great that they made those improvements without the recognition of the custom. It thus appears that in Lincolnshire the custom of giving compensation for improvements grew out of the improvements themselves, which the tenants made through confidence in the continuance of their holding. Another witness, Mr. Beasley, speaking as to the custom of South Lincolnshire, says, 'We have found it desirable to promote the tenant-right as much as possible.' And there can be little doubt that this so-called custom was in fact made by the land-valuers of the district, just as the common-law of England has been made by the judges who profess merely to declare it. Indeed, a witness being asked what was the custom as to guano, answered, 'The principle is not established for what time guano is to be allowed for.' Mr. Beasley, being asked what had been the increase of produce in the heath lands of Lincolnshire in consequence of improved farming, answered, 'The increase has been from almost nothing to 32 and 36 bushels of wheat to an acre. It was formerly little more than a rabbit-warren, only thirty-five years ago.' This witness stated that the custom as to drainage in his district was to allow the out-going tenant for the expense incurred in draining divided over five years. He believed that both landlords and tenants were perfectly satisfied with the allowances made in Lincolnshire. The custom of the country was so well ascertained and understood that the practice on many of the best estates was to farm without any lease or agreement of any kind. He considered that a lease of upwards of fourteen years would give the farmer equal inducement to improve as he had under the tenant-right. The witness stated that he had occupied for thirty years, and had made great improvements without having any agreement or lease, and he had a great objection either to grant or to take a lease. The landlord's objection to a lease is that the first part of the term is spent in getting up the condition of the land, and the latter part in lowering it. The tenant's objection seems to be that at the end of the term the bargain is also at an end, 'but if it is from year to year, neither party thinks of a change.'

"It may occur to a reader who does not know much of farmers that if they want these compensations they should stipulate for them when they take their farms. But a perusal of this report will show that what appears simple and obvious is very difficult. A farmer who went to a landlord's agent to prescribe the new conditions on which he would take a farm would be told that, if he did not chose to take it upon the old conditions, some other farmer would. Improvement must originate with landlords who have intelligence to see what is wanted, and pecuniary means to accomplish it. Notwithstanding the great advance which English agriculture has made since 1848, there are probably many districts which might be benefited by adopting the methods of improvement described in this report, which is also valuable as showing the most hopeful remedy for the ills of Ireland. Both countries want landlords like Lord Yarborough, who transplanted the Lincolnshire tenant-right, with modifications, to the Isle of Wight. Mr. Gibbons, the agent for Lord Yarborough, told the committee, 'In Lincolnshire we do not allow anything for linseed-cake for sheep. I have introduced it in the Isle of Wight.' Again, he said, 'I know what the general feeling about our Lincolnshire tenant-right is, and where I think they have not been quite liberal enough, I have made them rather more liberal.' This witness objected to the sort of legislation which other witnesses desired, on the ground that it would enable a tenant to make experiments at his landlord's expense. 'I know,' said he, 'very clever men whom I would not trust to spend my money.' But without legislation 'there is so much common sense in favour of this principle that it will make its way.' The witness would not assert that the Lincolnshire tenant-right had been upheld in any trial at law, but it had been frequently submitted to upon arbitration. A lawyer who was examined before the committee cited the legal definition of a custom, as that which has prevailed immemorially; but 'the custom of the country' with reference to husbandry means no more than the existing prevalent usage of the district. In Lincolnshire 'the valuers have from time to time settled the principle,' and perhaps between 1848 and the present year they may have been doing the same in the Isle of Wight. Experience has justified the opinion expressed by this committee, that a liberal system of compensation to the outgoing tenant is beneficial to agriculture, to the landlord, and to the farmer; that it leads to great increase in the productiveness of the soil, and to extended employment of the rural population. But any attempt to make the general adoption of such a system compulsory would be met with great practical difficulties, and the committee could do no more than

express their hope that it would be adopted by voluntary arrangement between landlords and tenants. This is the only reasonable answer that can be given to the demand for statutory tenant-right, whether in England or in Ireland."

The subjoined extract relates to the same subject as the foregoing; it recently appeared in the *Economist* as a contribution to the Agricultural Section of that paper:—

"A more striking illustration of the stagnant condition of all, or nearly all, that concerns the management of land in England could scarcely be found than the fact that the report on agricultural customs contained in a recently-issued blue book is merely a re-issue of the report of Mr. Pusey's committee of 1848. Mr. Pusey, as we all know, was himself an earnest improver, and he thought he could induce the landed interest to consent to give their tenants legal right to be paid for certain improvements, without abandoning that quasi-feudal domination over tenants so dear to the English landowner. Mr. Pusey found all his efforts to be labour in vain.

"The re-issue of that report, and its 'mild' conclusions, would show that the landlord mind now imagines the question may be taken up where Mr. Pusey left it. Farmers may have facilities to improve, if they be not rendered independent. An agricultural contemporary — whose views seem at times to halt between two opinions, the progressive and the stand-still, and remain, a kind of moral miracle, suspended between them—vouches for this fact, and says that the re-issue has been made at the instance of Mr. Newdegate. He also says, and rightly, that that part of the report which recommended the assimilation of the law as to agricultural fixtures to that of trade fixtures has been accomplished. It is well to remind the world of that infinitesimal progression, for in all else this report might as well have been made now as eighteen years ago, for all the good which has resulted from it to the agriculture of this country. It was then, as it is now, one of the makeshifts and make-believes by which the landed proprietors and their apologists have long striven, and still strive, to induce farmers to risk their capital in high farming, without the only securities which as prudent men they ought to require, *i. e.*, long and rational leases. Farmers may be certain—and there are few districts in England which have not afforded sad examples—that any reliance on customary allowances, whether of the old or new pattern, will be as unsafe in fact as it is unsound in principle. We know that many who seek to delude farmers, and perhaps themselves, by a sort of mock liberality, represent such allowances as equivalent to a lease, but let any farmer holding his farm under such terms try it. Let him quarrel with the gamekeeper—let him interfere with the game bred on his farm and fed on his crops for his landlord's profit—let him vote against his landlord's candidate at the county election—and he will then test the real value—the no value—of the 'tenant-right' panacea. We know such out-spoken truths are not well received in some quarters, but it is time that, in the best interests of agriculture—in the true interest of landlord and tenant—that they should be frequently spoken until they are, as they will be, generally accepted.

"The following extract from a letter to the *Times*, by Mr. Sanderson, a very able land agent, comes *apropos* to a comment on the 'I-will-and-I-won't' system of land management which would cajole tenant-farmers into yearly holdings with tenant-right agreements. In a former letter Mr. Sanderson has made a remark which had provoked adverse comments, and was to this effect, 'That were leases granted landlords would nearly double their incomes; farmers, by getting a fresh spur to exertion, would rapidly improve their position; while every class of the community would rejoice in the increase of native produce.' With respect to the first proposition, viz., that landlords would nearly double their incomes; which, if established, proves the others, it cannot be denied that the rental value of land is much higher when let on lease than from year to year. For my own part, whereever I fix farm rentals I put from *5s.* to *7s. 6d.* per acre more upon land of medium quality farmed under the security of a lease than if occupied on the system of annual tenancy. But this additional rental is a mere tithe of the value that landlords obtain by granting leases. Farming under the lease system is progressive, and from the large tenant outlay which the security of a lease induces, it is no unfrequent occurrence for farms, during a nineteen years' lease to be doubled in value without any outlay on the part of landlords. Indeed, what are usually termed landlord's improvements on a farm let on annual tenure, become tenant's improvements on farms let on lease. Tenant's outlay under the former system is too often limited to what one year will exhaust, while under the latter it embraces improvements which are recovered by periodical returns after a lapse of time. Taking into account the increased and increasing outlay in the shape of labour, manure, and implements which land requires to make it remunerative, I consider the question of security of tenure no longer doubtful, and *that farm leases are essential to the further development of British agriculture.*'

"There are few persons acquainted with English farming and English farmers, and whose prejudices or pre-conceptions permit them to see things as they are, who will not agree with Mr. Sanderson."

II.—*The Panic of* 1866 *and British Trade.*

In connection with the subjoined article on British trade, which has been taken from the *Daily News*, it will be convenient to supply some figures from the returns of the Bank of England to illustrate the violent character of the "credit panic" of last summer. From 7 per cent., the rate at which the Bank *minimum* had stood for the three previous weeks, it was reduced to 6 per cent. on the 15th March. The fluctuations in the bullion, the reserve, and the *minimum* rate of discount of the Bank during the crisis, are shown by the following figures :—

1866.	Gold Coin and Bullion in the Issue Department.	Reserve of Notes and Coin in the Banking Department.	*Minimum* Discount.	Date of *Change*.
	£	£		
March 14	13,428,000	8,804,000	6	March 15
May 2	12,712,000	5,636,000	7	May 3
" 9	12,295,000	5,812,000	9	" 10
" 16	11,852,000	1,203,000	10	" 17
August 15	13,152,000	4,611,000	8	August 16
" 22	13,691,000	5,559,000	7	" 23
" 29	14,732,000	6,934,000	6	" 30
Sept. 5	15,098,000	6,973,000	5	September 6

The Bank retained their *minimum* rate at 10 per cent. for no less than thirteen weeks.

The Bank of England notes in the hands of the public at the same dates, were in amount as hereunder stated :—

		Circulation of Bank of England Notes.
		£
March	14	20,906,000
May	2	23,310,000
„	9	22,807,000
„	16	26,651,000
August	15	25,234,000
„	22	24,798,000
„	29	24,502,000
Sept.	5	24,867,000

From the *Daily News* of the 6th November last :—

"The partial character of the commercial crisis during the present year is sufficiently shown by the returns of the Board of Trade. They afford complete evidence that, however much banking and other monetary institutions have suffered, the great body of merchants have escaped without serious injury. The fact that scarcely any failures have taken place was a conclusive proof upon this point; but, at all events, it might reasonably have been inferred that our general commerce would have been materially diminished. In one sense, perhaps, this is true, since the convulsion of last May must in some degree have retarded the progress shown in the previous six months. At the worst, however, we have remained stationary, while in many particulars we have actually made an advance. The Board of Trade returns have just been published for the first nine months of the year; and the declared value of our exports during that period has been as follows.—

	£
January	14,354,748
February	15,116,063
March	17,520,354
April	15,366,414
May	15,870,131
June	14,630,120
July	14,957,834
August	17,450,156
September	16,671,078
Total	141,936,898

"In the same period of 1865, the total was 119,717,377*l.*, and in 1864, 123,404,161*l.* In comparing, however, the periods preceding and succeeding the crisis, it appears that in the four months ending the 30th April the amounts were :—

	£
1864	49,892,420
'65	47,706,818
'66	62,357,579

"The increase, therefore, compared with the previous years, amounts to about 29 per cent. over 1865, and fully 24 per cent. over 1864. Taking the five months, from May to September, the totals stand as follows :—

	£
1864	73,511,741
'65	72,010,559
'66	79,579,319

"The augmentation is thus reduced to about 10½ per cent. over 1865, and 8½ per cent. over 1864. True, we have gained on the whole, but the proportion has fallen off considerably. It will be noticed that a large diminution took place in our export trade between March and April, and, in fact, the beginning of the crisis may be said to have manifested itself in the latter month. In order, therefore, to ascertain how far our general commerce has been affected by the convulsion that has recently occurred, the best comparison that can be made is between the first quarter of the year and the two succeeding quarters. In some respects it will be found that the results are less unfavourable than might have been expected. As regards cotton goods, for example, the actual quantities exported show an increase in the quantities, although the declared value is pretty nearly the same. Annexed are the figures:—

	Quantity.	Declared Value.
	Yards.	£
First Quarter, 1866— Piece goods	581,818,536	14,485,867
Second and Third Quarters— Piece goods	1,320,889,524	29,342,658

"In cotton yarns there has been a comparative falling off. This, however, is so far favourable that it shows an increased demand for the unmanufactured article here. Subjoined are the returns for the respective periods:—

	Quantity.	Declared Value.
	lbs.	£
First Quarter, 1866— Cotton yarn	34,679,987	3,768,770
Second and Third Quarters— Cotton yarn	64,503,432	6,158,319

"We may pass over several intermediate but important items, since the changes in them have been of no great significance. In linens, however, there has been a positive decrease. Taking, as before, the totals for the three quarters of the year, they will be found as under:—

	Quantity.	Declared Value.
	Yards.	£
First Quarter, 1866— Linen piece goods	70,084,043	2,547,700
Second and Third Quarters— Linen piece goods	120,600,744	4,247,607

"As regards iron there has been an augmentation, both in quantity and value, which would have possibly been much greater but from the natural reaction from the accumulated demand that arose on the conclusion of the American war. Still, the requirements for railway descriptions have been in this quarter growing larger. Our North American colonies and India figure as some of our best customers. Annexed are the actual returns:—

	Quantity.	Declared Value.
	Tons.	£
First Quarter, 1866— Iron	335,363	3,120,940
Second and Third Quarters— Iron	940,018	8,167,973

"Silks show a decrease, but to no material extent. Woollens are also lower; but in this case a decline might, even in the absence of a crisis, be expected, considering the immense development of this branch of trade during the cotton famine, and the reaction that has necessarily accompanied the re-opening of the southern ports of America. The totals, however, are still very large. The declared value is stated as follows:—

	£
First Quarter, 1866— Total of woollen manufactures	5,820,196
Second and Third Quarters— Total of woollen manufactures	10,969,433

"The returns which have lately been issued do not, as regards the exports to particular foreign countries, come down to a later period than the 31st August. They nevertheless possess a certain value. For example, we learn that in the first two months of the year the United States took from us exports to the amount of 6,687,445*l.*, against 1,967,057*l.* in 1865, and that in the succeeding six months they also purchased from us to the extent of 13,205,990*l.* For the eight months they bought 19,893,445*l.* in 1866, and less than half that sum, only 9,483,084*l.*, in 1865. As regards imports the particulars are not furnished, but it is sufficient to show that we received from the United States during that period enormously increased supplies of cotton and bullion. As regards cotton, the returns are as under:—Eight months ending 31st August, 1864, 108,670 cwt.; 1865, 109,863 cwt.; 1866, 3,834,000 cwt. Again, taking the totals of bullion, our imports were:—Eight months ending 31st August, 1864, 5,027,677*l.*; 1865, 3,126,225*l.*; 1866, 9,005,187*l.*

It is, therefore, abundantly clear that whatever we have supplied to the United States has been amply paid for, even without counting the large amounts of Government securities that have been readily bought upon this side. Although we can fairly congratulate ourselves upon the manner in which general commerce has passed through the late crisis, still it would be useless to disguise that there are some grounds for misgiving. It is impossible that a convulsion such as we have lately experienced can go by without causing some individuals suffering and loss. The wonder is that there has been so little; yet there is no doubt that trade is in a more satisfactory and sound position than has happened for years past, and the proof is at once apparent in the general immunity with which a crisis almost equalling that of 1825 has been borne. Thus far, although there may be something to be guarded against, there is little to fear."

Since the above account was written, the "Trade and Navigation" tables for October have been published. The results are not, on the whole, less satisfactory than those set forth in the article just quoted. Of the last returns, the *Times* observes that they—

> "Afford no indication of the absence of commercial prosperity, and fail to harmonize with the gloomy feelings that prevail in all directions. The month of October, 1865, was one of extraordinary activity in our export business, but the returns for the past month, published to-day, show an increase of nearly 9 per cent. over the totals of that date. Compared with the corresponding month of 1864, there is an increase of about 31 per cent. The improvement over last year is chiefly under the heads of cotton and woollen manufactures and miscellaneous or 'unenumerated' articles. In the shipments of cotton yarn there has been an increase of 28 per cent. in value and 39 per cent. in quantity, and in cotton manufactures an increase of 9 per cent. in value and 17 per cent. in quantity. Woollen goods figure for a falling off in quantity, but an increase of 10 per cent. in value. In the other stable branches there has been great general steadiness, but in several cases the slight difference that exists is on the side of a decline. Of linen goods the exports have been almost precisely equal, both as regards value and amount, to the large totals of last year. In those of iron there has been a fractional decrease both in quantity and value. Hardwares exhibit a reduction of 1 per cent., haberdashery 4 per cent., and silk manufactures 20 per cent. The total exportations for the first ten months of the year have been about 17 per cent. above those of last year, and 16 per cent. above those of the same period of 1864. Unless these operations have been persistently carried on upon unremunerative terms, a supposition for which there is not the slightest ground, there must already have been some progress towards the accumulation of new wealth in the country to repair the disasters of the panic, and when we consider the enormous amounts yearly received in the shape of foreign and colonial dividend, it will be seen that the process of accumulation must be going on at a rate which will not long remain without forcing some new channel for investment, if all the old channels are to be distrusted and abandoned, as would seem to be the present resolution of the public. The importations of foreign wheat during the month were 40 per cent. less than in October, 1865, and of flour 13 per cent. Of other descriptions of grain, with the exception of barley, they were likewise comparatively small."

III.—*A Finance Company.*

THE article here printed appeared in the *Economist* under the title of "A First Interior of a Finance Company:"—

> "Until now, finance companies of respectability have been in a certain sense unknown companies. Their directors have come down in good times and have said that they had made much money, and in bad times that they had made but little money, but in neither case was any real account given, or professed to be given, of the manner in which the money was made. On the contrary, it was said, and upon very plausible grounds, that it was contrary to the interest of the company to reveal the nature of its investments; that if at each half year the directors gave a list of the securities held by the company (and nothing less would really help the shareholders), the securities which were largely held would be depreciated; it would be said they were 'hanging over the market,' and so the very communicativeness of the company would have been turned against it. But now we have a real, though not an entirely complete account of the interior of one of these companies. The General Credit Company (which in consequence of a most absurd and mis-

chievous rule of law is about to reconstitute itself), has issued a statement remarkable for its clearness and particularity, and which will enable any one who wants to know to form a much better notion of the business of credit companies than any preceding materials made possible.

"The general result of the study of this document we believe will be that finance companies, though far from fulfilling the exaggerated conceptions of two years since, have still a legitimate place and purpose, and can still, upon fair grounds, make good dividends—a conclusion which, from the natural reaction of the human mind and the change in circumstances, is now in doubt. The most favourable point in the statement of the General Credit Company is that its liabilities to the public are very small. The *present* claims on it are described thus:—

		£
1.	Bills payable	33,123
2.	Deposit receipts	24,002
3.	Accounts current	197,300
4.	Sundries	3,650
		258,075

"And in addition to this there are some contingent liabilities, but even these are of manageable and inferior amount, and will, if acted on, increase the assets of the company to a very considerable, if not to an equal, extent. They are—1st, calls on shares held by the company, amounting to 44,225*l.*, only half of which the directors consider to be imminent for some years; 2ndly, a covenant to lend 118,500*l.* on the shares of an English railway, with an 'undoubted personal' guarantee; 3rdly, a promise to lend to a foreign Government, which may or may not amount to an investment of 45,000*l.* in the stock of that country. These liabilities, whether present or future, are, when compared with many which we have recently had explained to us, decidedly very small.

"On the other hand, the assets of the company are very considerable. The directors give the following list:—

		£
1.	Cash at bankers	137,618
2.	Consols, 30,000*l.*	26,818
3.	Lent on Stock Exchange to 15th November	48,480
4.	Consignment of gold to Egypt for immediate returns	20,101
5.	Bank and mercantile bills in portfolio	282,661
6.	Treasury bills of a foreign Government	30,000
7.	Freehold premises	48,847
8.	Shares, valued under the lowest market price	224,368
9.	Foreign loans „ „	32,396
10.	Accounts current	55,888
11.	Calls in arrear	30,265
12.	Loans secured by acceptances of borrowers and collateral securities, maturing within 3 months	254,713
	Ditto ditto 6 „	192,308
	Ditto ditto 7 „	238,468
	Ditto ditto later	31,500
13.	Loans upon railway debentures	70,000
14.	„ collaterally secured by a charge on land	160,050
15.	Sundry loans on securities	5,319
16.	Loans to a foreign railway company, overdue	151,300
		2,041,100

"This table is most instructive, as showing the sort of business in which the company have been engaged, which, though in a certain sense so far well known that it is matter of floating assertion and recognised belief in Lombard Street, was, nevertheless, incapable of proof and wholly unattested by evidence. Even now the nature of the collateral securities by which the borrowers' acceptances are secured is altogether unknown, and other points of necessarily imperfect information might easily be given. Generally the result is this, that the Credit Company have invested their money in what may be called the 'exceptional' securities of Lombard Street, There is a vast deal of business which does not exactly come under banking business, or discount business, or any other common head. The best banker or the best bill broker is in the habit of saying, 'This security *looks* queer. I do not say it *is* queer, but it has a complexity about it. It is not my business to examine complexities; on the contrary, it would be fatal to me if I began to examine them. My whole mind is taken up in dealing with a common, plain business. If I began difficult research, it would land me in the *Gazette*. But still there ought to be some persons who will undertake to examine securities which are really good, though out of course and odd-looking, and a finance company which really does this, and does this well, has (though it is in the change of opinion almost unpopular to say so) its proper place and its useful function in our money market.

"We cannot, indeed, at all undertake to say whether the General Credit Company has properly invested its money; there are no materials before us which are sufficient to enable us to judge. We can only say that there are securities which such a company might profitably select, if only it were skilful enough to select them, and no others. But we do not think that those who originally began the business comprehended its limitations. They divided large profits. But it must be evident to every one that occasionally such a company must make large losses. This is most fully and candidly admitted by the directors of the General Credit Company. They say that No. 16 loans to a foreign railway company 'overdue are in an unsatisfactory state,' and other losses they consider possible, but they believe that their reserve fund of 175,000*l.* will cover all these losses, or nearly so; and that their capital of 1,600,000*l.* may be considered intact. Yet even so we scarcely consider the dividend of 15 per cent. which the company has divided to be justified by the result. Such investments as they have dealt in yield large occasional gains; and many private persons have made immense fortunes by dealing in them and have few or no losses. But a *company* is under two very material difficulties in such a trade. First, it cannot be idle; it must employ its money; it must pay a dividend. And it will not be entirely easy to carry on two kinds of business, one in times of enterprise, and another in times of caution. There is a connection in such matters which cannot wholly be neglected. A company cannot stand still, though an individual who has made what he wants can and does. And secondly, a company is not only always restless but always existing. It is, so to say, immortal. It has to take the average, not of a year or two like a chance speculator, but of all years to come. On this account it cannot permanently gain exceptional profits; these belong to the happy speculator who intervenes at the moment of exception; but a continuous entity, such as a company, has to take its share of good fortune or ill fortune, unpleasant results and pleasant ones. A finance company which divides high dividends, probably divides at the expense of future low dividends, and even of future losses, and we do not think that any finance company two years ago duly understood this condition of its being.

"Again, we do not believe that any finance company will, now that their business is understood, be a large borrower from the public. The General Credit, as shown by their own account, are scarcely borrowers at all. And the public will hardly lend to any company whose investments are 'exceptional,' are by definition and idea investments out of the usual course. Lenders will say, 'These queer things *may* be all right, but we can never know that they are all right. If we lend to a finance company, we must lend to a company whose business is a difficult mystery, and whose securities would not yield the profit they do if we who are but common persons comprehended them.' A finance company will have to employ its own capital almost exclusively, and this will limit its dividends in the long run. The only permanent high dividends are those of companies which, in some shape or other, are dealing with much money of other people, and have to divide only upon a small capital of their own. Such companies have a great quotient and a small divisor, and therefore they can pay a dividend which no others ever can.

" After its general account, the General Credit Company makes two proposals. First, to lower the denomination of its shares, which, subject to the claims of existing creditors, all companies ought to be able to do. Unluckily, the Joint Stock Companies Act of 1862 omitted to give that power, and last year a supplementary bill, which supplied the defect, was rejected in the 'Lords,' at the instance of certain peers who do not like limited liability. But if such companies are permitted to exist, they ought not to be permitted to exist in fetters. They are either good, and ought to be free, or bad, and ought to be abolished. The present law is like the old custom of incarcerating a suspected but unconvicted person; it is sure to be wrong if he is innocent, and has no ground for being right if perchance he is guilty. Secondly, the company proposes to establish a discount business, but on this we think they entirely misconceive their position. It is true that there is an excellent opening in the city for a third discount house. There are only two first-class ones, Messrs. Alexander and Co., and the National Discount Company, and a third, to fill the gap caused by Overends' colapse, would be a real public gain. But the General Credit Company cannot fill that gap. No discount company will now satisfy the public which deviates into outlying securities. It was these which ruined Overends, and which awakened public caution. A company must be able to say to depositors, 'We have no *back shop ;* we have no hidden securities ; we take bills for discount, and we leave you bills as security; this and this wholly is our business.' A discount company lives on the money intrusted to it by others; a finance company upon its own capital; and it is a mischievous error thus to attempt to fuse the two."

IV.—*A Co-operative Colliery.*

From the *Saturday Review* of the 27th October :—

" The town hall at Leeds was recently the scene of a very remarkable meeting. Fifteen hundred coal miners, 'with their wives and sweethearts,' assembled to commemorate the improvement in their social and material position that had been effected by the judicious measures lately resorted to by their employers. One feature of the proceedings consisted in the presentation, on behalf of the workmen, of a piece of silver plate to the managing partner. The reader will at once assume that the proprietors of this particular colliery are a body of philanthropists, in whose eyes the percentage realised on the capital of the concern is but a trifle when compared with the fulfilment of their kindly wishes. He will admire the good-natured zeal for the innocent pleasure of their workpeople which is implied in the organisation of such an entertainment, while he will wish that the selfishness of human nature could oftener permit considerations of profit to be thus postponed to the promotion of mutual goodwill. Or, supposing him to be of a practical turn of mind, he may be led to condemn the intrusion of pure benevolence into business matters, and to prophesy the approaching ruin of the amiable enthusiasts who have made the experiment. If, however, he were acquainted with the recent history of the district whence the guests were drawn, his sober recollections would hardly coincide with the imaginary picture with which we have thus credited him. And if he had listened—even without this previous knowledge—to the speeches made at the meeting, he would gradually have come to discover that the associations originally called up by the mention of the Whitwood and Methley Collieries had been of a wholly different character from those suggested by the present gathering. He would have identified the name of the senior partner in the undertaking with one long connected with some of the sternest and most protracted contests between masters and men ever known in that branch of industry. He would have heard a frank confession that those years of constant warfare had been years of large pecuniary losses to the proprietors, as well as of deprivation and suffering to the miners employed in their service; and that it was in consequence of this conviction gradually forcing its way into the minds of the former that they had resolved to try some new expedient for reconciling two classes of persons whose respective powers seemed to be just so evenly balanced as to ensure the ruin of both.

"The interest attaching, therefore, to this bold innovation on long-established relations between employers and employed is far greater than would be excited by the good or evil fortunes of any merely charitable scheme. By slow degrees we are learning that, however valuable philanthropy may be as a preliminary agent, it will not supply the force which is wanted to bring the disputes between capital and labour to a satisfactory and final settlement. The higher class of workman does not ask in these days for charity; indeed, he would probably reject it if it were offered. He asks, though too often blindly and unintelligently, to have justice done him, and to receive from the gross profits of the master for whom he works a share which shall be fairly proportionate to the outlay which he has himself contributed. If this proportion can be ascertained, it is obviously to the interest of the capitalist to accede to the terms. To hold out for something better is merely to run the risk of the men refusing to work, or emigrating to other districts, and consequently of his own capital lying idle, instead of bringing in its fair return. A corresponding danger awaits the workman if he pitches his demands too high. In that case, he makes it impossible for his employer to go on producing except at a loss, and in this way he drives the capital on which he really depends for his support to seek a more profitable investment elsewhere. The whole machinery of strikes and lock-outs is simply a rude and imperfect attempt to work out this equation. The master is withheld from offering too little in the way of wages, by the fear of a combination among the men; the men are withheld from asking too much by the fear of a combination among the masters. Such a method as this can only give a very rough approximation to the real standard. Innumerable circumstances may interpose to prevent either party from feeling it safe to push its requirements to what may all the time be their just length. So long as the wrong is not too conspicuous, it may be better for the master to pay more, or for the men to take less, than the state of trade really dictates, rather than to provoke an appeal to that disastrous warfare which always lies as a possibility in the background. It follows, therefore, that even if men were governed only by considerations of interest, there are grave objections to the ordinary process by which the relations of labour and capital are adjusted. But when we further take into account the extent to which men are influenced by passion, and the utterly reckless manner in which, when so influenced, they will inflict suffering upon others, or submit to it in their own persons rather than yield a point, however trifling, about which they feel strongly, these objections are indefinitely multiplied.

"Considerations of this kind are too commonly only estimated at their full value by external and uninterested observers, and it is greatly to the credit of Messrs. Briggs that they should form an exception to this prevalent rule. About two years ago they became satisfied that it would not pay to carry on business on the footing on which it had been conducted up to that time. Their profits had fallen in one year to 4½ per cent., in another year to 3½ per cent., and the constant recurrence of strikes among their workmen offered no probability of effecting any improvement in their affairs. It was clear that there was little encouragement to run all the risks and to submit to all the anxieties of a business so costly and so uncertain as coal mining, and to get in return the same interest for the capital invested as it would have yielded if it had been left in the funds or put out on mortgage. They determined to try whether, by so far taking their workmen into partnership with themselves, as to make the interests of the two identical, the difficulty could not be solved. The company was accordingly registered under the Act of 1862, two-thirds of the share capital retained by the members of the firm, and one-third allotted in shares of 15*l.*, with 10*l.* called up, to their workmen and customers. The rate of wages paid was to be the average rate of the district, and the profits of the concern were to be divided in the following fashion:—10 per cent. was set aside as the dividend due to the capitalist, but all above that proportion was to be divided equally between the shareholders and the labourers in their employ. In order to encourage the latter class to become shareholders, the half set apart for them was to be again subdivided, so that the shareholders employed should appropriate one-third of the bonus, and the whole number employed the remaining two-thirds. It was agreed to try the plan here sketched during the year beginning 1st July, 1865; and in the previous May, Mr. H. C. Briggs, the managing partner of the firm, put out an address to the workmen, detailing the scheme at full length, and encouraging them to co-operate heartily with the experiment by a detailed example of the results which would follow, supposing the divisible profits for the year to amount to 12½ or 15 per cent. In the former case a workman, not a shareholder, would receive, according to Mr. Briggs's calculations, $1\frac{7}{10}$ths per cent. on his earnings, making, if his weekly wages amounted to 30*s.*, a bonus of 26*s.* 6*d.* at the end of the year; while a workman who was also a shareholder would receive 5 per cent., giving him—supposing his wages to be the same—a bonus of 3*l.* 18*s.* at the end of the year. If the profits should rise to 15 per cent., the bonus divisible among the workmen would amount to 10 per cent. on his earnings, or double the preceding estimate.

"For some time previously to the issuing of this circular, the profits of the concern had, as we have seen, been less than 5 per cent., so that it is not wonderful that promises based on the supposition that this sum might be trebled, or nearly so, encountered a good deal of doubt and suspicion. But the experience of the first year has abundantly justified Messrs. Briggs's anticipations. Fortune so far favoured them that trade was brisk, and this, 'aided by the increased care and attention of the workmen, and above all by the absence of strikes, enabled the directors to divide 12 per cent. for the year on the paid-up capital, and to devote a sum of 1,800*l.* (equal to 2 per cent. on the capital) to the formation of a workman's bonus fund.' Thus, on the one hand, the owners of capital realised an actually larger sum during the year than they had ever done before; and, on the other hand, the workmen received from 1*l.* to 10*l.* in addition to the usual wages paid in the neighbouring collieries. 'Many had a 5*l.* note in their possession for the first time, and some few had two, the highest bonus being paid to a miner who, being a shareholder, received on his year's earning of 109*l.* 8*s.* 9*d.* a bonus of 10*l.* 18*s.* 10*d.*' Here, therefore, there is no question of philanthropy. The results of the scheme are patent to every business man, and whatever doubts he may feel as to the ultimate working of the experiment he can have none as to the fairness with which it tends to benefit, so far as it benefits anybody, the capitalist and the labourer alike. 'We don't pretend,' said Mr. H. C. Briggs at the Leeds meeting, 'that we propounded our scheme solely from patriotic motives. We believed that it would pay; there is tangible proof that it has paid; and I believe that it will continue to pay.' So far as we can see, there is every reason to think that this prophecy will be fulfilled. The system of co-operation in the shape in which it is here introduced is free from many of the disadvantages attendant upon associations of workmen apart from capitalists, while it secures all the advantages which, under favourable circumstances, such associations have undoubtedly been proved to possess. It puts an absolute end to strikes, for when once the terms of the copartnership have been accepted, there is nothing left to quarrel about. Capital has its initial profit of 10*l.* per cent.; labour has its initial profit in the form of average wages; and all beyond this is equally divided between the two. But it is not to the cessation of strikes only that this success is due. It is caused at least as much by the improvement immediately visible in the character of the work done. The world is as yet a long way from a complete observance of the golden rule, and a man works very differently when he has only to consider how to be diligent enough to escape observation or dismissal, and when he is conscious that every addition to his master's income may in its degree be an addition to his own. In coal mining this discrepancy is even more apparent than in other trades, from the impossibility of subjecting the work done to any effective supervision, and Mr. Briggs pointed out in his original address to his workmen, three ways in which a little additional thought on the part of every man employed might effect a saving of upwards of 3,000*l.* a-year. It will be at once evident how powerful a motive to diligent labour is introduced by proprietors who can honestly say to their men, 'We have endeavoured to make your real interest so identical with our own that every man who by neglect or carelessness wastes the property of the company is reducing the amount available for bonus on the general earnings.' Such a consciousness, more than anything else, will make men careful themselves, and watchful over their fellows."

V.—*A Trade Society.*

As an example of a successful organisation, in course apparently of further and rapid development, the account of one year's proceedings of the *Friendly Operative Carpenters' and Joiners' Society* will be read with interest. The statement is taken from the *Manchester Guardian* of the 20th November:—

"It is somewhat of a novelty for trade unions to publish elaborate and detailed reports of their proceedings. Such a report has just been issued by the society named above, for the year ending August, 1866. The financial statement, which occupies the greater part of a pamphlet of a hundred pages, is preceded by a preface signed by Robert Last, the general secretary, of which the following are the principal portions:—'The union now numbers 140 lodges, comprising 9,490 members, being an increase for the year of 40 lodges and 2,504 members; a condition which must be exceedingly gratifying to the members at large; and rendered still more cheering by the fact that we have recently succeeded, for the first time, in planting our standard in our sister isle, a lodge having been opened in the important commercial city of Belfast; and that there is a very fair prospect of an early extension of our union to the land of Burns. Five additional lodges have been opened in the British metropolis during the year, as also one in each of the following towns:—Tipton, Widnes, Warwick, Workington, Bootle (near Liverpool), Cirencester, Frome, Elland, Buxton, Bilston, Worcester, Wells, Rugby, Prestwich, New Mills, Ramsgate, Barnsley, Great Grimsby, Withington, Liverpool, Newark, Merthyr Tydvil, Holborn Hill (Cumberland), Weston-super-Mare, Earlestown, Askham-in-Furness, Oystermouth, Birmingham, Stratford-on-Avon, Abergavenny, Cardiff, Belfast, Mansfield, Newton Heath, and Brecon. The total expenditure of the society during the last twelve months has been 6,577*l.*, independent of large sums voluntarily distributed by the several lodges irrespective of legitimate support. Out of this large sum 2,077*l.* has been expended on strikes; the principal items being, Carlisle, 573*l.*; Preston, 1,073*l.*; Gloucester, 61*l.*; Dudley, 25*l.*; Leicester, 27*l.*; Keighley, 39*l.*; Barrow-in-Furness, 29*l.*; Birmingham, 38*l.*; Bristol, 30*l.*; Nottingham, 46*l.*; Derby, 14*l.*; Oldham, 12*l.*; Liverpool, 22*l.*; Warrington, 19*l.* The remainder included expenditure in connection with local disputes of minor importance, in addition to the sum of 21*l.* for travelling members leaving their homes whilst strikes were pending. I much regret that we have not yet arrived at that happy era when strikes shall become things of the past. But, notwithstanding all the plausible theories that have been launched by well-meaning social economists, and the earnest protests and counsels addressed to the operative class, the fact, to my mind, remains clear, that until some intelligible, practicable scheme has been introduced whereby trade differences, when pushed to an extreme, can be satisfactorily adjusted, we have no alternative but to avail ourselves of the policy which has previously enabled us to vindicate our claims and preserve our rights; hoping that the time is not far distant when the combined intelligence of all concerned shall have devised a mode of procedure that shall happily supersede the kind of warfare of which strikes are the climax. Heavy as our expenditure has been on strike account, in no former year have so many towns obtained advantages; and I am glad to say that not a single instance has occurred of those advantages being solicited in which every effort has not been made to bring about an amicable settlement before adopting the only remaining resource; and it is pleasing also to observe that the conduct of the operatives on strike (on which so much depends in our efforts to secure the good opinion of the public) has, on the whole, been most exemplary. The following are the advantages referred to:—Burnley has obtained an advance of 2s. per week; Dudley, 1s., and a further advance of 1s. to take place in January next; Barrow, 2s.; Merthyr Tydfil, 1s.; Carlisle, 3s.; Preston, 2s.; Manchester, Salford, and vicinities, 1s. advance, and another advance of 1s. and the reduction of an hour in time, to come into operation in March; London, 2s. 8d. per week advance; Runcorn, 1s.; Leicester, 4s.; Southport, half-an-hour reduction in the weekly working time and 3s. advance in wages; Blackpool, 2s. per week; Warrington, 2s.; Frome, 2s. and half an hour reduction in the weekly working time; Sheffield, the Saturday half-holiday; Macclesfield, 3s. advance; Rosendale 2s. and two hours less; Wolverhampton, two hours, and a trifling advance in wages; Northwich, the half-holiday on Saturdays; Chorley, 2s.; Chesterfield, 3s.; Birmingham, an advance of ½d. per hour, and one hour less time; Swansea, 3s. per week, and a reduction of two hours during nine months of the year, and four hours and a-half for the remaining three months; Keighley, 2s. per week, and a reduction of three hours and a-half; Cheltenham, 3s. and two hours less; Ulverstone, 2s. and one hour per week; Bolton, 2s.; Retford, 1s. advance; Leigh, 2s. additional; Kendal, Saturday half-holiday; Derby, 2s. more during the winter months, and two hours and a-half less the year round; Eccles, 2s. weekly; Redditch, one hour less weekly and 1s. advance; Neath, 3s. and three hours less time; Wigan, 2s.; Gloucester, 3s. and one hour less time; Hull, 2s.; Dewsbury, a weekly reduction of five hours; Elland five hours less; Atherstone, four hours and a-half; Bath, 3s.; Oldham, 2s.; St. Helens, 2s.; Padiham, 2s.; Liverpool and environs, 3s. per week; Canterbury, 3s.; Lancaster, two hours reduction; Shrewsbury, 2s.; Nottingham, three hours and a-half reduction; Bridgwater, 3s. and one hour reduction; and Newport, 3s. and two hours and a-half less in weekly working hours. It will be observed that fifty-one different towns have secured various privileges during the year. During the year 492l. has been disbursed to members out of employment; for tools burnt, 119l.; for tools purloined, 65l.; for accident donations, 200l.; funeral allowances for members, fifty-nine at 10l. each, 590l.; donations for thirty-eight members' wives, 152l. In addition to this expenditure, 1,913l. has been disbursed in the relief of those of our brethren who have been incapable of following their employment through ill health, being an excess of 876l. as compared with the amount expended last year on sick and superannuation benefits. In closing this somewhat brief sketch of the operations and progress of the union during the past financial year, I need scarcely further endeavour to urge the great fact to which they all unmistakably point, namely, that our organisation is daily increasing in strength, in prestige, and in popularity; daily becoming more powerful for good, more perfect and compact in all its working arrangements, and better adapted to serve the great end we have in view of maintaining our legitimate position in the industrial world, and securing what every honest Englishman, if he does justice to himself and his family, will unwaveringly and manfully strive to obtain—a fair day's wage for a fair day's work.' "

VI.—*International Union for Strikes.*

FROM the *Manchester Guardian* of the 16th November:—

" The progress of the ironworkers' strike in the north has furnished a somewhat curious illustration of the policy which was advocated by the English delegates at the congress of working men, held last September, at Geneva. It may be remembered that the representatives of British industry went to that conference prepared to enforce to the utmost the principle that union is strength, and to induce their continental brethren to join them in forming one gigantic association, under the authority of which strikes might be made to take effect universally throughout the western world. That was the dream which had fascinated the imagination of those who despatched the emissaries from this country, and a very intoxicating dream it undoubtedly is. The power of combinations has been abundantly exemplified in modern society. In various directions we have seen what great results may be accomplished by the collection of very small contributions from myriads of subscribers, and the thirty centimes, or annual threepence, which was fixed as the quota to be paid by members of the new international union, might easily produce a revenue not to be despised by any Chancellor of the Exchequer in Europe. In fact we are told that the institutors of the movement have been more than satisfied with the progress made since its beginning at the London Exhibition of 1862, in which time 160,000 names have been inscribed upon the lists of the association, in France, Germany, Belgium, Italy, and Switzerland. Of course, if the founders are content, no one else has any business to be critical. But, as we have said, the English theory of union, and especially of union in strikes, is even now receiving singular illustration from the proceedings of the ironworkers. That powerful body of operatives has recently had rather severe experience of the evils of divided counsels. Nor is it at all extraordinary that the two executives which ruled in the trade should occasionally differ respecting the expediency of a particular strike, so that the Staffordshire men might at one time find lukewarm support in the north, while at another the workpeople on the Tyne and the Tees might be feebly backed at Wednesbury and Brierley Hill. Against this source of weakness a union of the whole trade would seem to be the readiest and surest remedy, and an attempt to put it in force has accordingly been made. But the experiment appears to have broken down almost as soon as it was begun. The seeming willingness of the executives to combine was at once frustrated by the opposition of their constituents. A report we published on Monday showed that the projected amalgamation, instead of bringing additional assistance to the men now out of work in the north, has practically resulted in stopping the supplies.

“ This effect, which should not be regarded as accidental, is of ill omen for the magnificent visions which dazzled some of the delegates who went to Geneva. In truth, as we observed at the time, the English members of the congress were doomed to disappointment in propounding their favourite nostrum of universal strikes. In an article on the proceedings in the current number of the *Revue des Deux Mondes*, M. Louis Reybaud points out some other differences of opinion which are scarcely less significant. The French delegates, in settling the qualification for seats in the council, were particularly anxious to exclude all who were not themselves *bonâ fide* working men, actually employed in manual labour. It was the only way, they said, to prevent the introduction of mere advocates; and, without intending any animosity towards other classes, they held that the interests of labour could not be safely confided to any persons who were not labourers themselves. But their proposal met with an obstinate resistance from the representatives of England and Switzerland, and the former declared emphatically that if they consented to it, they would be immediately disowned by their constituents in London. It was impossible, they urged, for them to forget the services they had received from men whose only labour was that of the mind. A warm discussion appears to have ensued, but ultimately the French proposal was negatived by twenty-five votes to twenty, and so the members of the Association are left free to choose their representatives from what rank of society they please. The decision can scarcely be held favourable to the cause of peace, but the course taken by the English delegates was an almost necessary consequence of that pursued in the unions at home. Our working men seem never to apprehend that there can be any risk in confiding their cause to persons whose interests are not identical with their own. Nor are we disposed to quarrel with what is, at all events, a generous error. Still, the fact remains that the part of a counsellor or an advocate is in these matters essentially different from that of the actors and sufferers, and that the latter are liable to be severely prejudiced by confounding the two. There is only too much reason to believe that not a few strikes in this country have been wastefully prolonged by the influence of persons totally unconnected with the trade affected. An executive council is inevitably tempted to supply some ostensible reasons for its own existence, and this temptation will more especially beset members who do not experience in their own persons the effect of its decrees. We suspect that the instinct of the French delegates at Geneva led them to a sound conclusion, but we are not surprised that their proposition found no favour with representatives accustomed to exercise influence in our English unions. If the international association fulfils the hopes of its founders, a seat in its executive council will be an object of no inconsiderable ambition.

"The conference at Geneva was troubled by another question, which seems to have been dismissed as almost insoluble. This was, What is to be done with the women and children? Society unfortunately cannot very well get on, in any rank, without women and children; and they are becoming more and more an obstacle to the successful organisation of labour. Women, it seems, are everywhere intruding into the employments of men; and, as they are often willing to work for less wages, they more or less curtail the power of the unions over the rate of pay. The question was met in a characteristic manner. Not a word was said that would imply the existence of any rivalry, but much breath was spent in deploring the sufferings and demoralisation of the unhappy workwomen—evils, it was said, which required that women should be excluded from all manufactures, either by a direct law, or by the agency of the police. In vain did a timid opponent suggest that to forbid a woman to work was in many cases to condemn her to starve, and that, if factories were little favourable to morality, idleness combined with misery was still less so. The conference cut short all argument by proscribing all female labour of the kind, and, as M. Reybaud observes, without pretending to say how the women are to live. But, in fact, the key to this and other chimerical proposals may be found in the theories which evidently prevailed among the delegates, and which are simply those of Owen and Proudhon, stripped of some of their more revolting features. The main object at which the conference resolved to aim is a general reduction of the time of labour to eight hours a-day, a result which supposes so many other changes contemporaneous with itself that it seems needless to consider how far the world would suffer by the diminution of production which is dreaded by M. Reybaud, or whether the additional leisure would, as he also fears, be fatal to the workman's habits of frugality. The French critic points out that the international union will find but a very limited sphere of operations on the continent. Among the lessons which our English operatives are likely to learn among their foreign allies, not the least profitable may be a knowledge of the superior liberty which they enjoy at home for prosecuting their own objects, although the laws are made by the classes whom they habitually suspect."

VII.—*The "Statistical Committee" of Lloyd's.*

A FEW years since the shipping casualties reported in the *Register of Lloyd's* were tabulated and published in *Lloyd's List*. The statistic represented, so far as known, the disasters of the maritime navies of the world for the six years ended with 1859. These tables attracted the attention of Mr. Henry Jeula, a member of Lloyd's, who from this source compiled the statistics of shipping casualties which have, from time to time since June, 1863, appeared in the *Journal.*

Further consideration only deepened the conviction of the importance of a systematic arrangement and publication of maritime casualties. Hoping to awaken interest in the subject in other minds, Mr. Jeula extracted from *Lloyd's List* for 1864, the wrecks and casualties reported during each month of that year, arranging them under different heads, and in geographical divisions. These tables appeared in the *Statistical Journal* for September and December, 1865. Early in the present year, Mr. Jeula addressed a letter to the committee of Lloyd's, suggesting that some definite means should be adopted by which the information obtained by them, at very considerable cost, should be digested, tabulated, and published regularly.

This suggestion led to the appointment of the "Statistical Committee," who have an office on the establishment, and to whom the services of a clerk have been assigned.

On the 1st of May last, the committee commenced their work, and have since arranged a "Register of Losses," of a very comprehensive character. They are endeavouring to gather all available intelligence relating to maritime disasters, as reported in *Lloyd's List*, which was published on the 11th October. The first extended table contained the wrecks and casualties reported from 1st January to 30th June, 1866. It is understood that the committee are now engaged upon a scheme for arranging the statistics in geographical divisions. A registrar of casualties upon this principle, if carefully kept up, will doubtless become, in the course of a few years, of great interest and value. Previous to the appointment of this committee there had not been any opportunity of readily comparing the increase or decrease of specific casualties, such as collision, abandonment, &c., beyond the very narrow limits of our own coasts.

The names of the gentlemen who form the Statistical Committee of Lloyd's are—

William Wilson Saunders, Esq., F.R.S.;
Charles Leathley, Esq.; and
Henry Jeula, Esq., F.S.S.

To this committee the public are indebted for an important extension in the field of statistical research. An analysis, prepared by Mr. Jeula, of the reported wrecks and casualties for the first quarter of the present year, will be found at pp. 606, *et seq.*

MARRIAGES, BIRTHS, AND DEATHS IN THE UNITED KINGDOM.

No. I.—ENGLAND AND WALES.

MARRIAGES in the Quarter ended 30th June, 1866, and BIRTHS and DEATHS in the Quarter ended 30th September, 1866.

The *Registers* of the United Kingdom show that the *births* of 239,748 children, and the *deaths* of 151,054 persons of both sexes, were registered in the three months ending on *September* 30th.

The marriages of Great Britain in the quarter ending *June* 30th were 54,542. The return of marriages in Ireland has not been received.

The death-rate of the United Kingdom is less than that prevailing in England and Wales. The several facts concerning the other divisions of the kingdom are set forth in the reports of the Registrar-General of Scotland and the Registrar-General of Ireland.

The resident population of England, Scotland, and Ireland, in the middle of 1866, is estimated at about 29,935,404. The corrected death-rate of the quarter is 2·085 per cent.

England:—Marriages, Births, *and* Deaths, *returned in the Years* 1860-66, *and in the* Quarters *of those Years.*

Calendar Years, 1860-66:—*Numbers.*

Years.........	'66.	'65.	'64.	'63.	'62.	'61.	'60.
Marriages No.	—	185,520	180,387	173,510	164,030	163,706	170,156
Births........ ,,	—	747,870	740,275	727,417	712,684	696,406	684,048
Deaths........ ,,	—	491,360	495,531	473,837	436,566	435,114	422,721

Quarters *of each Calendar Year*, 1860-66.

(I.) Marriages:—*Numbers.*

Qrs. ended last day of	'66.	'65.	'64.	'63.	'62.	'61.	'60.
March ....No.	37,576	36,835	37,988	35,528	33,953	33,274	35,150
June .... ,,	48,523	45,772	44,599	44,146	40,853	42,012	43,777
Septmbr..... ,,	—	45,863	44,675	41,932	40,600	39,884	40,541
Decmbr. .... ,,	—	57,050	53,125	51,904	48,624	48,536	50,688

QUARTERS *of each Calendar Year,* 1860–66.

(II.) BIRTHS:—*Numbers.*

Qrs. ended last day of	'66.	'65.	'64.	'63.	'62.	'61.	'60.
March ....No.	196,737	194,287	192,947	186,341	181,990	172,933	183,180
June .... ,,	192,459	192,921	188,835	189,340	185,554	184,820	174,028
Septmbr..... ,,	178,982	181,642	181,015	173,439	172,709	172,033	164,121
Decmbr. .... ,,	—	179,020	177,478	178,297	172,431	166,620	162,719

(III.) DEATHS:—*Numbers.*

Qrs. ended last day of	'66.	'65.	'64.	'63.	'62.	'61.	'60.
March ....No.	138,233	140,646	142,977	128,096	122,019	121,215	122,617
June .... ,,	128,692	116,006	116,880	118,121	107,392	107,558	110,869
Septmbr..... ,,	116,826	113,404	112,223	112,504	92,381	101,232	86,312
Decmbr. .... ,,	—	121,304	123,451	115,116	114,774	105,109	102,923

England.—This Return comprises the BIRTHS and DEATHS registered by 2,200 registrars in all the districts of England during the summer quarter that ended on September 30th, 1866; and the MARRIAGES in 12,883 churches or chapels, about 5,459 registered places of worship unconnected with the Established Church, and 641 Superintendent Registrars' offices, in the quarter that ended on June 30th, 1866.

The marriage-rate of the spring quarter was higher than it ever was before in that season since registration began. The birth-rate of the summer quarter was near the average. The country was visited by cholera, and the mortality was raised much above the summer average by the epidemic in some districts, while the rest of the kingdom was unusually healthy.

MARRIAGES.—In the quarter that ended 30th June, 97,046 persons were married in England. The marriages were 48,523 against 45,772 in the same quarter of the previous year. They were more numerous by 10,000 than in the corresponding period of 1856. A marked increase in the marriages of last spring over the numbers of 1864-65 occurs in London, the south-eastern counties, Lancashire, the West Riding of Yorkshire, Durham, and Northumberland, and generally in the midland counties. The marriages in London were 8,737; in Liverpool and West Derby, 1,794; in Manchester, 1,253.

The annual marriage-rate in the quarter was 1·838 per cent. against an average of 1·698, or out of 1,000 persons living rather more than 18 would have entered wedlock (while previously, taking one spring quarter with another, the number had been 17) if the same rate that prevailed in the quarter had been maintained for a year.

BIRTHS.—In the quarter ending 30th September, 178,982 children were born. The number was about 2,000 less than in either of the two previous summer quarters. The annual birth-rate for the quarter was 3·344 per cent., the average of ten corresponding quarters (1856-65) being almost identical, namely, 3·343 per cent.

INCREASE OF POPULATION.—The deaths last quarter were 116,826, and if compared with the births there is a difference in favour of the latter of 62,156, which number represents the natural increase of population.

ENGLAND:—*Annual Rates per Cent. of* PERSONS MARRIED, BIRTHS, *and* DEATHS, *during the* YEARS 1860-66, *and the* QUARTERS *of those Years.*

Calendar YEARS, 1860-66:—*General Percentage Results.*

YEARS	'66.	Mean '56-'65.	'65.	'64.	'63.	'62.	'61.	'60.
Estmtd. Popln. of England *in thousands* in middle of each Year....	21,210	—	20,991	20,772	20,554	20,336	20,119	19,903
Persons Married Per ct.	—	1·678	1·768	1·736	1·688	1·614	1·628	1·710
Births .... ,,	—	3·483	3·563	3·561	3·539	3·504	3·461	3·437
Deaths .... ,,	—	2·224	2·341	2·385	2·305	2·147	2·163	2·124

QUARTERS *of each Calendar Year*, 1860-66.

(I.) PERSONS MARRIED:—*Percentages.*

Qrs. ended last day of	'66.	Mean '56-'65.	'65.	'64.	'63.	'62.	'61.	'60.
March....Per ct.	1·442	1·398	1·428	1·472	1·408	1·360	1·346	1·422
June....... ,,	1·838	1·698	1·752	1·724	1·726	1·614	1·678	1·766
Septmbr. ,,	—	1·621	1·732	1·704	1·616	1·582	1·570	1·614
Decmbr. ,,	—	1·981	2·148	2·022	1·996	1·890	1·906	2·012

(II.) BIRTHS:—*Percentages.*

Qrs. ended last day of	'66.	Mean '56-'65.	'65.	'64.	'63.	'62.	'61.	'60.
March....Per ct.	3·776	3·644	3·768	3·740	3·691	3·644	3·500	3·707
June .... ,,	3·644	3·620	3·691	3·651	3·700	3·665	3·690	3·512
Septmbr. ,,	3·344	3·343	3·429	3·453	3·343	3·365	3·388	3·267
Decmbr. ,,	—	3·322	3·370	3·376	3·428	3·350	3·272	3·230

(III.) DEATHS:—*Percentages.*

Qrs. ended last day of	'66.	Mean '56-'65.	'65.	'64.	'63.	'62.	'61.	'60.
March....Per ct.	2·653	2·504	2·728	2·772	2·538	2·443	2·453	2·481
June........ ,,	2·437	2·186	2·220	2·260	2·308	2·121	2·147	2·237
Septmbr. ,,	2·182	2·002	2·141	2·141	2·169	1·800	1·994	1·718
Decmbr. ,,	—	2·205	2·284	2·349	2·213	2·230	2·064	2·043

The total number of emigrants in the September quarter from ports in the United Kingdom where emigration officers are stationed was 47,153;* they were as many as in the same period of 1864, but not so many as in that of 1863, and few as compared with emigrants who left in the summer of 1865. Taking round numbers, 36,000 (of whom half were natives of Ireland) out of the 47,000 went to the United States, nearly 7,000 to the Australasian, and nearly 4,000 to the North American colonies.

PRICES, PAUPERISM, AND THE WEATHER.—The price of wheat, which had been gradually rising from 38*s*. per quarter in the March quarter of 1865 to 46*s*. in the spring of the present year, suddenly rose last quarter to 51*s*. Beef was also dear last quarter, the mean price having been 6⅛*d*. per lb., as sold by the carcase at Leadenhall and Newgate Markets, against 5½*d*. and 5¾*d*. in the corresponding period of 1864 and 1865. Mutton did not rise, the price having been 5½*d*. for inferior, and 8¼*d*. for superior quality; the mean price 6¾*d*. Best potatoes at Southwark rose to 97*s*. 6*d*. per ton. Thus the tendency of provision markets was decidedly upward.

CONSOLS, PROVISIONS, PAUPERISM, *and* TEMPERATURE, *in each of the Nine* QUARTERS *ended 30th September*, 1866.

1	2	3	4	5	6	7	8	9
Quarters ending	Average Price of Consols (for Money).	Average Price of Wheat per Quarter in England and Wales.	Average Prices of Meat per lb. at Leadenhall and Newgate Markets (by the Carcase), with the *Mean* Prices.		Average Prices of Potatoes (York Regents) per Ton at Waterside Market, Southwark.	Pauperism. Quarterly Average of the Number of Paupers relieved on the *last day* of each week.		Mean Temperature.
			Beef.	Mutton.		In-door.	Out-door.	
1864	£	*s.* *d.*	*d.* *d.* *d.*	*d.* *d.* *d.*	*s.* *s.* *s.*			°
30 Sept.	89⅛	42 3	4½—6½ 5½	5½—7 6¼	80—120 100	115,698	739,341	59·4
31 Dec.	89⅝	38 5	4½—7 5¾	5¼—7¼ 6¼	80—95 87	128,322	771,879	43·7
1865								
31 Mar.	89⅜	38 4	4½—7 5¾	5¼—7¼ 6¼	85—97 91	142,329	813,371	36·5
30 June	90⅝	40 6	4¾—6¾ 5¾	6¼—8½ 7⅜	90—115 102	125,846	776,016	56·2
30 Sept.	89⅝	43 3	4½—7 5¾	6¼—8¾ 7½	65—100 85	117,172	719,589	62·5
31 Dec.	88 4/8	44 10	4¼—7 5⅛	5½—8¼ 6⅞	60—90 75	129,036	725,259	46·0
1866								
31 Mar.	87	45 6	4½—6¾ 5⅝	5½—7¾ 6⅝	55—90 72	139,546	759,402	41·2
30 June	86 4/8	46 6	4¾—7 5⅞	5½—8½ 7½	60—95 77	123,657	734,139	53·0
30 Sept.	88⅜	51 –	5¼—7¼ 6⅛	5½—8¼ 6¾	75—120 97	120,955	717,553	58·9

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* Return with which the Registrar-General has been favoured by the Emigration Commissioners: of 47,153 emigrants the origin was undistinguished in 2,489 cases, which have been distributed by calculation.

The quarterly average number of paupers relieved on the last day of each week was, in-door 120,955, out-door 717,553. The former number is rather high for the season, but the latter number shows a decrease, probably owing to the lateness of the harvest, by which labourers would be engaged longer than usual in field work.

The mean temperature of the air in the quarter at Greenwich was 58°·9, which is 1°·1 below the average of the season in twenty-five years. Each of the three months, but particularly August, was cold. The rain-fall measured 7·9 in., half of which was in September, when the amount was an inch and a half in excess of the average. Mr. Glaisher writes that the weather, which had been warm and fine at the close of the previous quarter, changed to cold at the beginning of July, and in every part of the country rain fell almost daily. From the 9th to the 17th was a period of heat, but from the 18th July to the 27th September the temperature was almost constantly low. Rain fell frequently all over the country in July; and in August seriously interrupted harvest work. In September the atmospheric pressure was always low, and in Guernsey and the west of England eight or nine inches of rain fell; near the east coast three inches; about London four inches. In the midland counties there were floods; thousands of acres were under water, and much damage was done. In the three visitations of cholera in past years there was great atmospheric pressure, high temperature, narrow diurnal range owing chiefly to high night temperature, defect of rain, wind, and electricity; and in the last of those (1854) a remarkable blue mist was observed which prevailed night and day. In nearly all these particulars the meteorological character of the present epidemic season is different from that of previous periods when cholera prevailed; but the blue mist has been again visible; it was first seen by Mr. Glaisher on 30th July, and by other observers in the preceding week. Since that time it has been generally present; on some days no trace of it visible, and on other days seen for parts of a day only. It has extended from Aberdeen to the Isle of Wight, and was of the same tint of blue everywhere. This mist increased in intensity when viewed through a telescope; usually no mist can be seen when thus viewed; it increased in density during the fall of rain, though usually mist rises from rain. Its density did not decrease when the wind was blowing moderately strong; it decreased when a gale was blowing, but increased again on its subsidence. Whatever may be its nature, he adds, the fact is very remarkable, that since the cholera period of 1854 this phenomenon has not been observed till the present time.

DEATHS; AND THE STATE OF THE PUBLIC HEALTH.—116,826 deaths were registered in the 92 days ending September 30th; and the annual rate of mortality was 2·182 per cent. This exceeds the average mortality of the last ten summer quarters by ·180, or one-twelfth part; and the excess on the population is equivalent to 10,720 deaths. The deaths returned from cholera amounted to 10,365; the deaths from diarrhœa, also due in great part to the same cause, to 9,570. Their distribution is shown in pp. 43—47.*

The mortality was at the rate of 25 per 1,000 in the large town districts, and 18 in the village and small town districts; the excess in the large town districts was 7. The mortality in the town districts was considerably above its usual summer average; while in the rest of the country the increase was slight.

The three months of July, August, and September are now usually the healthiest of the year in England; and their average annual rate of mortality per 1,000 is 20, but their mortality during these months in the present year, was at the rate of 22.

The mortality of London was at the rate of 29 in 1,000; of the north-western division 27; in the two northern divisions and in Wales, the mortality was at the rate of 22. In the other divisions the mortality was low, and indeed lower than their average: in the south-eastern division it was 18, in the south midland it was 18, in the eastern 18, the south-western 17, the west midland 17, and in the north midland division 18.

Upon turning to the large cities of the United Kingdom, still greater divergences are observed; the mortality was at the rate of 19 in Birmingham, 21 in

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* See the original return of the Registrar-General.

Bristol, 22 in Hull, 24 in Sheffield, 26 in Salford, 31 in Manchester, 32 in Newcastle-upon-Tyne, 50 in Liverpool. In Edinburgh the rate of mortality was 23, in Glasgow 25, in Dublin 24. The excessively high rates of mortality are generally due to the invasion of cholera.

Average Annual Rate of Mortality to 1,000 *of the Population in the Eleven Divisions of England in the Ten Years* 1851-60; *in the Year* 1865; *in the Summer and Autumn Quarters of* 1865; *and in the Winter, Spring, and Summer Quarters of* 1866.

Divisions.	Average Annual Rate of Mortality to 1,000 Living in						
	Ten Years, 1851-60.	1865.			1866.		
		Year.	Summer Quarter.	Autumn Quarter.	Winter Quarter.	Spring Quarter.	Summer Quarter
I. London	23·63	24·40	21·91	24·05	26·66	25·29	28·86
II. South-Eastern counties	19·55	20·40	19·07	19·44	21·85	19·81	18·11
III. South Midland "	20·44	21·56	20·02	20·79	22·85	21·03	17·62
IV. Eastern counties	20·58	21·06	19·75	19·60	23·19	21·61	18·10
V. South-Western counties	20·01	20·42	17·14	18·81	23·85	21·86	17·30
VI. West Midland "	22·35	22·18	19·46	21·89	26·54	24·16	17·48
VII. North Midland "	21·10	21·81	20·43	20·55	24·01	22·58	17·58
VIII. North-Western "	25·51	27·38	25·64	28·93	33·84	28·74	27·31
IX. Yorkshire	23·09	25·71	25·13	24·86	29·60	27·59	22·03
X. Northern counties	21·99	23·70	22·86	23·03	24·43	23·95	21·95
XI. Monmouthshire and Wales	21·28	23·36	18·74	20·41	23·92	23·45	22·31

It is well known that this epidemic raged around us in France, Belgium, and Holland earlier in the year, and during July it established itself in England, where it put the sanitary defences of nearly every district on the coasts to the test. Indeed the cholera matter (*Cholerine*) has evidently been diffused all over the kingdom; for in every county, except Herefordshire and Rutlandshire, deaths from cholera have been registered, and diarrhœa has prevailed to such an unusual extent as to imply the existence of some specific zymotic element. It was only, however, when that element was diffused by water, and by the wilful neglect of hygienic precautions, that the mortality became appalling.

Thus, although the waters are yet by no means free from impurities, the people of London are no longer supplied, as they were in 1849, with unfiltered waters contaminated by their own sewers; and the deaths in the districts of the west, north, centre, and south of London were 1,023 by cholera and 1,558 by diarrhœa, among 2,430,046 people. Whereas 3,691 deaths by cholera and 740 by diarrhœa, that is, 4,431 together, occurred in the East London districts, among 607,945 people supplied with water chiefly from the Old Ford reservoir of one company. Deduct these deaths, and the deaths by cholera in London are reduced to 1,023, while the deaths by cholera in England are reduced from 10,365 to 6,674. Again, of the 2,022 deaths from cholera in Lancashire and Cheshire, no less than 1,603 were registered in the Liverpool and West Derby districts alone. Deduct these deaths, with 2,447 more in West Ham (adjoining East London, and supplied with the same water), in Portsea Island, in the Isle of Wight, Southampton, Exeter, with three adjacent districts of South Devon and Swansea, as well as in certain districts of South Wales, and the deaths from cholera in the rest of England are brought down to 2,624.

This proves that although the freest intercourse has been kept up between the various parts of the country, the epidemic has only assumed an aggravated form where the defences have been weak and circumstances have been in its favour.

By some fatality, Dr. Trench, the able medical officer of health for Liverpool, "ceased to have any direct voice in the cholera arrangements so soon as the Orders in Council were issued." Energetic measures were, however, adopted by the vestry with his approval.

On the other side of the Mersey is Birkenhead, exposed to the same epidemic influences as Liverpool; and in that district the deaths from cholera only amounted to 30, out of a population of more than 61,420.

ANNUAL RATE *of* MORTALITY *per Cent. in* TOWN *and* COUNTRY DISTRICTS *of* ENGLAND *in each Quarter of the Years* 1866-64.

	Area in Statute Acres.	Population Enumerated.	Quarters ending	Annual Rate of Mortality per Cent. in each Quarter of the Years			
		1861.		1866.	Mean '56-65.	1865.	1864.
In 142 Districts, and 56 Sub-districts, comprising the *Chief-Towns*........	3,287,151	10,930,841	March ..	2·967	2·680	2·881	2·980
			June	2·641	2·322	2·339	2·412
			Sept.	2·515	2·237	2·387	2·386
			Dec.	—	2·460	2·564	2·615
			Year	—	2·425	2·543	2·598
In the remaining Districts and Sub-districts of England and Wales, comprising chiefly *Small Towns* and *Country Parishes*	34,037,732	9,135,383	Year	—	1·989	2·080	2·107
			March ..	2·252	2·295	2·514	2·512
			June	2·170	2·024	2·049	2·070
			Sept.	1·755	1·736	1·828	1·833
			Dec.	—	1·901	1·927	2·014

Note.—The three months, January, February, March, contain 90, in leap year 91 days; the three months, April, May, June, 91 days; each of the last two quarters of the year 92 days. For this inequality a correction has been made in the calculations, also for the difference between 365 and 365·25 days, and 366 and 365·25 days in leap year.

Dr. Baylis, the medical health officer, thus describes the successful precautions taken at Birkenhead:—

In addition to ordinary measures, we commenced a system, before its appearance, of deodorising all the worst middens in the town, on the principle that, if we could destroy the gases of decomposition in the worst parts of the town, we should remove one of the greatest depressents of the vital force; this system was carried out more effectually after the disease appeared.

I saw the first patient that died, and my friendly connection with all the medical men of the place enabled me to reach nearly every succeeding fatal case. To the friends of each I gave the most urgent instructions, furnished the poor with disinfectants, sprinkled their floors with carbolic acid, had chloride of lime regularly thrown in their and neighbouring ashpits, used carbolic acid in their water-closets and drains; took, in the first instance, and until the guardians moved, the responsibility of burning the soiled bedding; had all the soiled clothes steeped in chlorine water, and saw that the houses were perfectly cleansed down. Finally the body was partially covered with charcoal, and buried in a few hours.

ENGLAND: — MARRIAGES *Registered in Quarters ended 30th June,* 1806-64; *and* BIRTHS *and* DEATHS *in Quarters ended 30th September,* 1866-64.

1	2	3	4	5	6
DIVISIONS. (England and Wales.)	AREA in Statute Acres.	POPULATION, 1861. (*Persons.*)	MARRIAGES in Quarters ended 30th June.		
			'66.	'65.	'64.
		No.	No.	No.	No.
ENGLD. & WALES....*Totals*	37,324,883	20,066,224	48,523	45,772	44,599
I. London	77,997	2,803,989	8,737	8,523	7,687
II. South-Eastern	4,065,935	1,847,661	3,829	3,568	3,616
III. South Midland	3,201,290	1,295,515	2,227	2,148	2,155
IV. Eastern	3,214,099	1,142,562	1,729	1,857	1,693
V. South-Western	4,993,660	1,835,714	3,677	3,656	3,577
VI. West Midland	3,865,332	2,436,568	5,925	5,492	5,378
VII. North Midland	3,540,797	1,288,928	3,174	3,016	2,931
VIII. North-Western	2,000,227	2,935,540	8,005	6,942	7,141
IX. Yorkshire	3,654,636	2,015,541	5,140	5,023	4,644
X. Northern	3,492,322	1,151,372	3,137	2,862	2,865
XI. Monmthsh. & Wales	5,218,588	1,312,834	2,943	2,955	2,913

7	8	9	10	11	12	13
DIVISIONS. (England and Wales.)	BIRTHS in Quarters ended 30th September.			DEATHS in Quarters ended 30th September.		
	'66.	'65.	'64.	'66.	'65.	'64.
	No.	No.	No.	No.	No.	No.
ENGLD. & WALES....*Totals*	178,982	181,642	181,015	116,826	113,404	112,223
I. London	25,776	25,711	25,285	22,353	16,682	18,272
II. South-Eastern	15,197	15,560	15,589	9,025	9,383	9,057
III. South Midland	10,722	10,948	10,830	5,904	6,676	6,764
IV. Eastern	8,702	9,015	9,355	5,282	5,751	5,526
V. South-Western	13,481	14,194	14,519	8,081	7,994	8,468
VI. West Midland	22,134	22,452	22,525	11,517	12,656	13,829
VII. North Midland	10,847	11,290	11,323	5,994	6,807	6,870
VIII. North-Western	28,366	28,247	28,187	22,069	20,381	18,157
IX. Yorkshire	19,658	20,315	19,911	11,925	13,444	12,430
X. Northern	12,164	12,194	11,986	6,985	7,150	6,501
XI. Monmthsh. & Wales	11,935	11,716	11,555	7,791	6,480	6,849

REMARKS ON THE WEATHER

DURING THE QUARTER ENDING 30TH SEPTEMBER, 1866.

By JAMES GLAISHER, ESQ., F.R.S., *&c., Secretary of the Meteorological Society.*

The last quarter closed with fine warm weather. At the beginning of this the weather changed to cold, with rain falling almost daily in every part of the country. The mean temperature of the first eight days was below their average daily by 5°. On the 9th of July the weather changed to fine and hot, which continued till the 17th; the average daily excess of this period was 6¼°. From 18th July till 27th September the temperature was nearly always cold; the exceptions were 24th to 28th August, and a few days at the beginning of September, whose mean temperatures either just reached their averages or were slightly in excess. The mean daily deficiency of these 72 days was 1¾°.

In July rain fell frequently all over the country. In the first week wheat in the southern districts passed the flowering stage, and in northern appeared in ear. Towards the end of the month some wheat in extreme south districts was cut. In August till the third week the weather was very unsettled, with low atmospheric pressure and frequent rain, which greatly interrupted harvest work. During dry intervals a large portion of the crops in the south of England were stacked, but in some cases in a damp condition. The month of August was not favourable to agricultural pursuits, the absence of sunshine retarded the crops ripening, the frequent rain injured them, but to a less extent than was feared, in consequence of the heavy drying winds. In some places the crops were beaten down by the rain and twisted by the wind, so that reaping machines could not be used.

In September the weather was unsettled; the atmospheric pressure was always low. Rain fell all over the country in excess, amounting in Guernsey and in the western parts of England to 8 in. and 9 in., gradually decreasing in amount proceeding eastward to 3 in. near the east coast; about London near 4 in. fell.

In the south of England most of the crops were housed, but in every other part of the country they suffered greatly, and those in the north and in Scotland, owing to want of sunshine and the low day temperature made but little progress towards ripening. In the midland counties, owing to the heavy rain, there were great floods, the waters of the Trent, the Soar, and the Derwent overflowed and covered thousands of acres of corn land, and caused great damage.

The month of September was very bad for all agricultural pursuits.

The co-existence of cholera with coincident meteorological phenomena, which were experienced during the three preceding visitations in the years 1832, 1848, and 1854, viz., great atmospheric pressure, high temperature, small diurnal range (owing mostly to high night temperature), deficiency of rain, very little wind (and consequently a stagnation of the atmosphere, and prevalent mist), a deficiency of electricity (as evidenced by the few electrical disturbances), and in 1854 the presence of a remarkable blue mist which prevailed night and day, give a high interest to the meteorology of the present quarter, during which the epidemic of cholera has again visited us.

The mean temperature of July was 61°·0, being 0°·4 below the average of the preceding 95 years, 0°·7 below the average of 25 years, and lower than any year since 1863, when the temperature was 60°·8.

The mean temperature of August was 59°·4, being 1°·3 lower than the average of the preceding 95 years, 1°·8 lower than the average of 25 years, and 1° 8 below that of last year.

The mean temperature of September was 56°·4, being 0°·1 lower than the average of the preceding 95 years, 0°·7 lower than the average of 25 years, and lower than the temperature of last year to the amount of 7°·5.

The mean high day temperatures for the three months were below the averages to the respective amounts of 1°·2, 3°·4, and 2°·6.

The mean low night temperatures were below their averages in July and August to the respective amounts of 0°·4 and 0°·8, and was 1°·6 above its average in September.

Therefore the days and nights were cold in July and August, but the days were cold and the nights were warm in September.

The daily ranges of temperature were respectively 0°·8, 2°·6, and 4°·2 below their average during the three months.

The fall of rain was 1·0 in. below the average in July, the same as the average in August, and 1·5 in. above the average in September.

The mean temperature of the air at Greenwich in the three months ending August, constituting the three summer months, was 60°·4, being 0°·2 below the average of the preceding 25 years.

1866. Months.	Temperature of Air. Mean.	Air. Diff. from Average of 95 Years.	Air. Diff. from Average of 25 Years.	Evaporation. Mean.	Evaporation. Diff. from Average of 25 Years.	Dew Point. Mean.	Dew Point. Diff. from Average of 25 Years.	Air—Daily Range. Mean.	Air—Daily Range. Diff. from Average of 25 Years.	Water of the Thames	Elastic Force of Vapour. Mean.	Elastic Force of Vapour. Diff. from Average of 25 Years.	Weight of Vapour in a Cubic Foot of Air. Mean.	Weight of Vapour. Diff. from Average of 25 Years.
	°	°	°	°	°	°	°	°	°	°	In.	In.	Gr.	Gr.
July	61·0	−0·4	−0·7	57·1	−0·3	53·7	0·0	20·1	−0·8	65·7	·413	·000	4·6	0·0
August ...	59·4	−1·3	−1·8	55·9	−1·4	52·7	−1·1	17·1	−2·6	61·4	·399	−·019	4·5	−0·1
Sept.	56·4	−0·1	−0·7	53·9	−0·1	51·5	+0·4	14·5	−4·2	58·3	·381	·000	4·3	+0·1
Mean......	58·9	−0·6	−1·1	55·6	−0·6	52·6	−0·2	17·2	−2·5	61·8	·398	−·006	4·5	0·0

1866. Months.	Degree of Humidity. Mean.	Degree of Humidity. Diff. from Average of 25 Years.	Reading of Barometer. Mean.	Reading of Barometer. Diff. from Average of 25 Years.	Weight of a Cubic Foot of Air. Mean.	Weight of a Cubic Foot of Air. Diff. from Average of 25 Years.	Rain. Amnt.	Rain. Diff. from Average of 51 Years.	Daily Horizontal Movement of the Air.	Reading of Thermometer on Grass. Number of Nights it was At or below 30°.	Number of Nights it was Between 30° and 40°.	Number of Nights it was Above 40°.	Lowest Reading at Night.	Highest Reading at Night.
			In.	In.	Gr.	Gr.	In.	In.	Miles.				°	°
July	78	+ 2	29·770	−·033	528	0	1·6	−1·0	233	0	3	28	38·9	58·5
August ...	79	+ 2	29·637	−·154	528	− 1	2·4	0·0	254	0	0	31	41·1	55·2
Sept.	84	+ 3	29·581	−·247	530	− 4	3·9	+1·5	251	0	3	27	33·1	54·9
Mean......	80	+ 2	29·663	−·145	529	− 2	Sum 7·9	Sum +0·5	Mean 246	Sum 0	Sum 6	Sum 86	Lowest 33·1	Highst 58·5

Note.—In reading this table it will be borne in mind that the sign (−) minus signifies below the average, and that the sign (+) plus signifies above the average.

ENGLAND:—*Meteorological Table, Quarter ended 30th September,* 1866.

1	2	3	4	5	6	7	8	9
NAMES OF STATIONS.	Mean Pressure of Dry Air reduced to the Level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	*Mean Temperature of the Air.*	Mean Degree of Humidity.
	in.	°	°	°	°	°	°	
Guernsey	29·474	78·5	45·5	33·0	23·3	9·3	57·6	88
Ventnor	29·478	76·0	49·0	27·0	20·7	8·9	60·9	84
Barnstaple	29·417	84·0	38·5	44·5	31·0	13·2	58·8	86
Royal Observatory	29·445	87·2	41·3	45·9	34·8	17·2	58·9	80
Royston	29·432	88·8	40·2	48·6	37·6	18·3	57·7	81
Lampeter	29·417	88·3	35·0	53·3	41·5	18·8	56·9	89
Diss (Norfolk)	29·440	87·5	37·0	50·5	42·0	18·3	58·5	78
Derby	29·407	83·0	42·0	41·0	33·3	15·3	55·4	83
Liverpool	29·456	82·6	44·5	38·1	23·9	9·1	58·0	72
Wakefield	29·409	88·2	33·0	55·2	30·4	17·3	56·9	82
Stonyhurst	29·360	82·8	38·3	44·5	33·2	15·3	55·2	85
North Shields	29·437	75·5	40·3	35·2	23·4	9·9	53·9	85

10	11	12	13	14	15	16	17	18
NAMES OF STATIONS.	WIND.					Mean Amount of Cloud.	RAIN.	
	Mean estimated Strength.	Relative Proportion of					Number of Days on which it fell.	Amount collected.
		N.	E.	S.	W.			in.
Guernsey	1·5	6	5	7	13	5·7	49	14·8
Ventnor	—	1	5	4	20	—	47	10·9
Barnstaple	1·3	3	5	8	15	3·4	61	14·2
Royal Observatory	0·5	5	4	9	12	7·5	46	7·9
Royston	—	5	3	9	13	6·7	51	8·5
Lampeter	0·6	5	5	8	13	6·8	60	16·1
Diss (Norfolk)	1·1	4	4	13	9	6·8	52	8·6
Derby	—	6	4	5	14	—	62	13·7
Liverpool	1·4	5	6	9	10	6·7	62	10·4
Wakefield	1·6	6	4	9	12	7·2	65	13·4
Stonyhurst	0·6	6	4	8	12	8·5	68	22·0
North Shields	1·6	7	5	7	11	6·2	57	10·5

No. II.—SCOTLAND.

MARRIAGES, BIRTHS, AND DEATHS IN THE QUARTER ENDED 30TH SEPTEMBER, 1866.

Scotland, for the purposes of registration, is divided into 1,014 districts; and this return comprises the BIRTHS, DEATHS, and MARRIAGES registered in these districts (with the exception of the inaccessible island of St. Kilda), during the quarter ending 30th September, 1866. From these it would appear that births, deaths, and marriages have all been considerably above the average of the corresponding quarter of the ten previous years.

BIRTHS.—27,197 births were registered in Scotland during the quarter ending 30th September, 1866, being in the annual proportion of 345 births in every 10,000 persons of the estimated population. This is considerably above the average proportion of the third quarter of the ten previous years, which only yielded an annual proportion of 336 births in every 10,000 persons. This increase in the proportion of births during the quarter was not confined to Scotland, but was observed in England also. Thus, during the third quarter of 1866, there were registered in England 178,982 births, showing the proportion of 341 births in every 10,000 persons of the estimated population; the average of the quarter in the ten previous years being only 334 births in a like population.

The town and rural districts of Scotland exhibited the usual difference in the proportion of their births. Thus, in the 126 town districts (which embrace the towns with populations of 2,000 and upwards), 15,783 births were registered; while in the 888 rural districts (embracing the remainder of the population of Scotland), only 11,414 births occurred; thus indicating an annual proportion of 374 births in every 10,000 persons in the town districts, but only 312 births in a like population in the rural districts.

TABLE I.—*Proportion of Illegitimate in every Hundred Births in the Divisions and Counties of Scotland, during the Quarter ending 30th September*, 1866.

Divisions.	Per Cent. of Illegitimate.	Counties.	Per Cent. of Illegitimate.	Counties.	Per Cent. of Illegitimate.	Counties.	Per Cent. of Illegitimate.
SCOTLAND	10·1						
Northern	6·1	Shetland	5·1	Forfar	12·0	Lanark	9·0
		Orkney	4·7	Perth	11·2	Linlithgow .	10·3
North-Western	5·7	Caithness	9·4	Fife	9·9	Edinburgh .	9·7
North-Eastern	14·8	Sutherland....	2·1	Kinross	10·0	Haddington	9·6
East Midland..	11·5	Ross and Cromarty	3·7	Clackmannan	12·5	Berwick .... Peebles........	14·2 11·5
West Midland.	8·0	Inverness	7·4	Stirling	8·6	Selkirk	9·3
		Nairn	7·6	Dumbarton ..	7·5	Roxburgh ..	10·0
South-Western	8·8	Elgin	12·5	Argyll	6·5	Dumfries	14·7
South-Eastern.	10·1	Banff	16·8	Bute	11·9	Kirkcudbright ..	12·1
		Aberdeen	15·4	Renfrew........	8·8		
Southern	12·9	Kincardine....	13·0	Ayr................	8·3	Wigtown	14·5

Of the 27,197 children born during the quarter, 24,437 were legitimate, and 2,760 illegitimate; thus indicating that 10·1 per cent. of the children born were illegitimate. During the quarter the proportion of illegitimate births in the town and rural districts was absolutely the same—a rare occurrence, seeing that in general the proportion is highest in the rural districts. Table I exhibits the percentage of illegitimate births in the several divisions and counties of Scotland, and generally accords with previous returns, the counties embraced in the north-eastern and southern divisions exhibiting by far the highest proportion of illegitimate births.

Of the children born during the quarter, 14,058 were males, and 13,139 females; thus indicating that the very high proportion of 107 boys were born for every 100 girls.

9,421 births were registered in July, 9,164 in August, and 8,612 in September; being at the rate of 304 births daily during July, 296 daily during August, and 287 daily during September.

DEATHS.—15,451 deaths were registered in Scotland during the third quarter of 1866, being in the annual proportion of 1·95 deaths in every 10,000 persons of the estimated population. This is a high proportion for the quarter, and considerably above the mean mortality of the quarter during the ten previous years, which was only in the proportion of 178 deaths in every 10,000 persons of the estimated population. The deaths in England were also above their average during the same quarter; seeing that, during the third quarter of 1866, there were registered 116,826 deaths in England, which indicates an annual proportion of 222 deaths in every 10,000 persons, the average of the quarter for the ten previous years being 200 deaths in a like population. Similar agencies deleterious to health must therefore have been in active operation in both countries during the third quarter of 1866.

TABLE II.—*Number of Births, Deaths, and Marriages in Scotland, and in the Town and Country Districts during the Quarter ending 30th September, 1866, and their Proportion to the Population; also the Number of Illegitimate Births, and their Proportion to the Total Births.*

	Population.		Total Births.			Illegitimate Births.		
	Census, 1861.	Estimated, 1866.	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every
SCOTLAND	3,062,294	3,153,413	27,197	3·45	29	2,760	10·1	9·8
126 town districts	1,603,875	1,688,288	15,783	3·74	27	1,596	10·1	9·8
888 rural „	1,458,419	1,465,125	11,414	3·12	32	1,164	10·1	9·8

	Population.		Deaths.			Marriages.		
	Census, 1861.	Estimated, 1866.	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every
SCOTLAND	3,062,294	3,153,413	15,451	1·95	51	5,089	0·64	155
126 town districts	1,603,875	1,688,288	9,827	2·32	43	3,553	0·84	118
888 rural „	1,458,419	1,465,125	5,624	1·53	65	1,536	0·42	238

The deaths in the town districts, as usual, greatly exceeded those in the rural districts, notwithstanding the fact that during that quarter a large proportion of the town populations resort to country quarters, and that the deaths among them are entered on the registers of the rural districts. Thus, in the 126 town districts, 9,827 deaths were registered, but only 5,624 deaths in the rural districts; indicating an annual death-rate of 232 deaths in every 10,000 persons in the town, but only that of 153 deaths in a like population in the rural districts.

Of the deaths, 5,432 were registered in July, 5,307 in August, and 4,712 in September; being at the rate of 175 deaths daily during July, 171 daily during August, and 157 daily during September.

INCREASE OF THE POPULATION.—As the births numbered 27,197, and the deaths 15,451, the natural increase of the population by births was 11,746. From that number ought to be deducted all the Scottish emigrants. From a return furnished to the Registrar-General by the Emigration Commissioners, it appears that 47,153 persons emigrated from the ports of Great Britain and Ireland at which are emigration officers, of which number 16,050 were English, 3,573 Scotch, 20,194 Irish, 4,847 foreigners, while of 2,489 persons the birth-place was not ascertained. If 199 be allowed as the Scottish proportion of those whose origin was not ascertained, the total Scottish emigrants would amount to 3,772; and that number deducted from the excess of births over deaths, would leave 7,974 as the increase of the population during the quarter, making no allowance for the migration to England and Ireland, nor for the drafts to the army, navy, &c.

MARRIAGES.—5,089 marriages were registered in Scotland during the third quarter of 1866, being in the annual proportion of 64 marriages in every 10,000 persons. The average proportion of the quarter during the ten previous years, was only 60 marriages in every 10,000 persons, so that the marriage-rate has been considerably above its average. This increase has equally occurred in the town and rural districts since 1863, and indicates an increasing prosperity in the country, seeing that the number of marriages is greatly regulated by the abundance of work and the facility of finding a livelihood.

During the third quarter it has been remarked that the town marriages are usually twice as numerous, in proportion to the population, as those in the rural districts; and during the past quarter they have been in this proportion. Thus, in the 126 town districts, 3,553 marriages were registered, but only 1,536 marriages in the 888 rural districts; thus indicating an annual proportion of 84 marriages in the town districts in every 10,000 persons, but only 42 marriages in a like population in the rural districts.

Of the 5,089 marriages, 2,300 were registered in July, 1,447 in August, and 1,342 in September.

HEALTH OF THE POPULATION.—It would appear that the high mortality which prevailed during the quarter was chiefly to be attributed to the presence of scarlatina and hooping-cough among children. Typhus and typhoid fevers, which had been prevalent during the previous quarters, seemed to be almost everywhere abating. Epidemic cholera, however, which had been raging with great severity on the continents of Europe and America, made its appearance in Scotland the last week of July; and though its ravages, when the quarter closed, had been partial, and the deaths comparatively few, they sensibly augmented the mortality of the quarter. The disease seemed to have invaded Scotland much in the same manner as in 1848, appearing first in the sea-board towns and villages on the east coast, and then spreading over the country: principally selecting as its victims the inhabitants of the town, village, street, or hamlet, who were living in a locality in a bad sanitary condition, or who were using water from rivers, burns, lochs, pump-wells, or cisterns, whose purity had been more or less affected by containing organic matters in a state of decomposition. It may be mentioned that the microscope often detects the presence of these organic matters when chemical analysis fails to show that anything is wrong.

In 1832 epidemic cholera broke out in Scotland towards the end of January, and then followed the law which seems to regulate its progress in all the warmer countries of the continent, viz., increased with the rise of temperature, proved most fatal in the autumnal months, and died out in December. In its subsequent attacks, however, it followed in this country a different law—the law which seems to regulate the spread of fever and most of our epidemics, viz.,—it first manifested itself in the autumn, as the weather began to cool, increased with the fall of temperature, and died out in spring on the advent of the warm weather. It is well to be aware of these facts, lest we commit the mistake of trusting that the cold weather will arrest its course, while we neglect to employ those sanitary means which science has proved materially check its ravages.

TABLE III.—*Number of Births, Deaths, and Marriages in Scotland, and their Proportion to the Population, Estimated to the Middle of each Year, during each Quarter of the Years* 1865 *to* 1862 *inclusive.*

	1866.		1865.		1864.		1863.		1862.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
***1st Quarter*—**										
Births	28,876	3·66	28,608	3·65	28,177	3·61	26,729	3·44	27,089	3·51
Deaths	19,075	2·42	20,786	2·65	22,576	2·89	19,227	2·47	19,420	2·51
Marriages ..	5,627	0·71	5,407	0·69	5,333	0·68	5,090	0·65	4,763	0·62
Mean Temperature	38°·0		35°·3		35°·7		40°·9		38°·8	
***2nd Quarter*—**										
Births	29,801	3·78	30,332	3·86	29,992	3·84	29,651	3·82	28,728	3·73
Deaths	18,556	2·35	17,066	2·17	18,445	2·36	17,947	2·31	17,385	2·25
Marriages ..	6,019	0·76	5,698	0·72	5,710	0·73	5,557	0·71	5,185	0·67
Mean Temperature	49°·3		51°·5		49°·9		49°·0		49°·4	
***3rd Quarter*—**										
Births	27,197	3·45	27,320	3·48	27,063	3·47	26,362	3·40	25,783	3·34
Deaths	15,451	1·95	15,907	2·02	16,131	2·06	16,249	2·09	14,235	1·84
Marriages ..	5,089	0·64	5,335	0·68	4,993	0·64	4,863	0·62	4,570	0·59
Mean Temperature	54°·4		57°·5		54°·5		53°·9		54°·4	
***4th Quarter*—**										
Births	—	—	26,866	3·42	27,213	3·49	26,583	3·42	25,469	3·30
Deaths	—	—	17,062	2·17	17,151	2·19	17,998	2·32	16,155	2·09
Marriages ..	—	—	7,137	0·91	6,639	0·85	6,577	0·84	6,079	0·78
Mean Temperature	—		43°·4		42°·0		43°·6		42°·0	
***Year*—**										
Population.	—		3,136,057		3,118,701		3,101,345		3,083,989	
Births	—	—	113,126	3·60	112,445	3·60	109,325	3·52	107,069	3·47
Deaths	—	—	70,821	2·25	74,303	2·38	71,421	2·30	67,195	2·17
Marriages ..	—	—	23,577	0·75	22,675	0·72	22,087	0·71	20,597	0·66

WEATHER.—Speaking generally of the weather which prevailed during the third quarter, it may be said that it was colder, more rainy, more cloudy, and the atmosphere damper than it has been for many seasons; while fogs and mists prevailed to an unusual extent; there was much less sunshine than in ordinary seasons; and the daily variations of temperature, particularly during the latter half of September, were much less than usual. The connection of such weather with increased mortality is not very apparent; but it is a remarkable fact that the description published in 1848 relative to the kind of weather which prevailed previous to the outbreak of cholera in Scotland during that year, might be substituted for that which prevailed previous to its outbreak this year; and the same kind of fog, which wind does not seem to remove, has hung over the country, and more especially over the towns and villages affected with that epidemic.

The mean barometric pressure, reduced to the sea level and to 32° Fahr., was 29·911 inches in July, 29·687 inches in August, and 29·555 in September. The mean temperature of the quarter was 54°·4; that of July being 56°·9; of August 55°·0, and of September 51°·4. The highest temperature (in the shade) at any station was 87°·5 in July, 73°·7 in August, and 70°·5 in September. The lowest temperature (in the shade) was 35°·0 in July, 31°·0 in August, and 28°·3 in September. The mean daily range of temperature was 14°·0 in July, 12°·7 in August, and 12°·7 in September. The mean degree of humidity of the atmosphere was 83 in July, 86 in August, and 87 in September. Rain fell on 51 days during the quarter, with a mean depth of 11·47 inches of water. Thus rain fell 13 days in July, 19 in August, and 19 in September; with a mean depth of water of 3·14 inches in July, 3·99 inches in August, and 4·34 inches in September. The sun shone for 207 hours in July, 146 hours in August, and 133 hours in September. Winds with an easterly point blew 10 days in July, 8 days in August, and 6 days in September. Winds with a westerly point blew 12 days in July, 15 days in August, and 15 days in September.

SCOTLAND:—MARRIAGES, BIRTHS, *and* DEATHS *Registered in the Quarter ended 30th September*, 1866.

1 DIVISIONS. (Scotland)	2 AREA in Statute Acres.	3 POPULATION, 1861. (*Persons.*)	4 Marriages.	5 Births.	6 Deaths.
		No.	No.	No.	No.
SCOTLAND .... *Totals*	19,639,377	3,062,294	5,089	27,197	15,451
I. Northern	2,261,622	130,422	84	849	446
II. North-Western........	4,739,876	167,329	114	1,134	546
III. North-Eastern	2,429,594	366,783	504	3,125	1,642
IV. East Midland	2,790,492	523,822	825	4,498	2,406
V. West Midland	2,693,176	242,507	368	1,968	1,108
VI. South-Western........	1,462,397	1,008,253	2,232	10,391	6,246
VII. South-Eastern	1,192,524	408,962	750	3,659	2,202
VIII. Southern	2,069,696	214,216	212	1,573	855

No. III.—IRELAND.

MARRIAGES IN THE QUARTER ENDED 30TH JUNE, 1866; AND BIRTHS AND DEATHS IN THE QUARTER ENDED 30TH SEPTEMBER, 1866.

This return includes the MARRIAGES *registered* during April, May, and June, 1866; and the BIRTHS and DEATHS *registered* during July, August, and September, 1866, in the 721 registrars' districts of Ireland. The districts are coextensive with the dispensary districts of the 163 Poor Law Unions; which latter form the districts of the Superintendent Registrars.

MARRIAGES.—The number of marriages *registered* in Ireland during the second quarter of the present year amounted to 6,045, equal to an annual ratio of 1 in every 231, or ·433 per cent. of the *estimated* population.* The number *registered* in the corresponding period of last year was 5,661.

Of the 6,045 marriages *registered* during the second quarter of this year, 3,941 were between Roman Catholics, representing an annual ratio of 1 marriage in every 286, or ·350 per cent. of the Roman Catholic population;† and the remaining 2,104 marriages were between Protestants, being equal to an annual ratio of 1 in every 153, or ·653 per cent. of the Protestant population.†

BIRTHS.—There were 33,580 births *registered* in Ireland during the quarter ending 30th September last—17,340 boys and 16,240 girls—representing an annual ratio of 1 in every 41·6, or 2·41 per cent. of the *estimated* population;* the births *registered* during the corresponding quarter of last year were 34,158, and in 1864 they were 33,892.

In only eight unions or superintendent registrars' districts did the number of births *registered* during the quarter equal an annual ratio of 1 in 33 of the population; they were the following:—Belfast, 1 in 25; Clifden, 1 in 27; Claremorris, Oughterard, and Swineford, each, 1 in 31; Castletown (county Cork), 1 in 32; and Ballymena and Millstreet, each 1 in 33.

In the following fourteen superintendent registrars' districts the number of births *registered* during the quarter did not exceed an annual ratio of 1 in 60, viz.,—Athy, Mullingar, and Thurles, each, 1 in 60; Parsonstown and Ballinasloe, each 1 in 61; Donegal, Glenties, Dunshaughlin and Edenderry, each, 1 in 62; Croom, 1 in 65; Borrisokane, 1 in 70; Roscrea, 1 in 71; Dunfanaghy, 1 in 85; *and Ballyvaghan*, 1 *in* 131.

DEATHS.—The deaths *registered* in Ireland during the third quarter of the present year amounted to 18,751—9,445 males and 9,306 females—affording an annual ratio of 1 in every 74·4, or 1·34 per cent. of the *estimated* population. The numbers *registered* during the corresponding quarters of 1864 and 1865 were 19,259 and 18,854 respectively.

According to the number of deaths *registered* during the quarter there were only seven unions or superintendent registrars' districts in Ireland which had a mortality equal to an annual ratio of 1 in 57 of the population,* viz.:—Dublin South, 1 in 40; Belfast, 1 in 41; Dublin North, 1 in 43; Clonmel, 1 in 51; Callan, 1 in 54; Cashel, 1 in 56; and Waterford, 1 in 57.

In the following superintendent registrars' districts the deaths *registered* during the quarter *did not reach an annual ratio of* 1 *in* 100:—Letterkenny and Skibbereen, each, 1 in 101; Mountbellew, 1 in 102; Delvin, Urlingford, Ballina, Clogheen, and Dingle, each, 1 in 103; Enniskillen and Tulla, each, 1 in 104; Kells, Killala, and Bandon, each, 1 in 106; Bawnboy, 1 in 108; Millstreet, 1 in 109; Oughterard, 1 in 110; Clones, Borrisokane, Castlereagh, and Killadysert, each, 1 in 111;

* For estimated population see p. 77 of the Quarterly Report.

† According to the Census of 1861.

Gortin and Glennamaddy, each, 1 in 112; Magherafelt, Cahersiveen, and Macroom, each, 1 in 113; Cookstown, Dromore West, and Skull, each, 1 in 116; Bantry, 1 in 117; Ennistimon and Scarriff, each, 1 in 118; Listowel, 1 in 119; Ballinrobe, 1 in 121; Stranorlar, Carrick-on-Shannon, and Belmullet, each, 1 in 122; Manorhamilton and Kenmare, each, 1 in 123; Castlebar, 1 in 124; Donaghmore, 1 in 125; Tobercurry, 1 in 126; Roscrea, 1 in 128; Swineford, 1 in 130; Boyle and Tuam, each, 1 in 131; Newport (county Mayo), 1 in 134; Croom, 1 in 136; Ballyshannon, 1 in 141; Oldcastle, 1 in 160; Glenties, 1 in 148; Ballyvaghan, 1 in 170; Strokestown, 1 in 174; and Dunfanaghy, 1 in 241.

EMIGRATION.—According to the returns obtained by the enumerators, the number of emigrants who left the ports of Ireland, during the quarter ended 30th September last, amounted to 19,640—11,447 males and 8,193 females—being 8,021 less than the number who emigrated during the corresponding quarter of 1865.

Emigration from Ireland during the Months of July, August, and September, in 1865 *and* 1866.

Months.	Number of Emigrants.								
	Males.			Females			Total.		
	1865.	1866.	Decrease.	1865.	1866.	Decrease.	1865.	1866.	Decrease.
July	4,841	4,497	344	3,985	2,765	1,220	8,826	7,262	1,564
August	4,573	3,838	735	4,338	2,783	1,555	8,911	6,621	2,290
September	5,316	3,112	2,204	4,608	2,645	1,963	9,924	5,757	4,167
Total	14,730	11,447	3,283	12,931	8,193	4,738	27,661	19,640	8,021

ESTIMATED DECREASE OF THE POPULATION.—The number of births *registered* during the quarter ended 30th September last being 33,580; the deaths 18,751; and the number of emigrants 19,640—(according to the returns obtained by the enumerators at the several seaports);—a decrease of 4,811 would therefore appear to have taken place in the population of Ireland during that period.

PRICES OF PROVISIONS AND PAUPERISM.—The average price of Messrs. Manders and Co.'s 4-lb. loaf for the third quarter of the present year was 6½*d*., being one halfpenny more than the average for the corresponding quarter of 1865; the price was 7*d*. during the first four weeks of the quarter, and 6½*d*. during the remaining nine weeks.

The average price of oatmeal for the third quarter of 1865 was 15*s*. 3*d*.; for the corresponding quarter in the present year it was 15*s*. 5*d*.; the average price was highest (16*s*. 6*d*.) in the third week of the quarter, and lowest (14*s*. 6*d*.) in the eighth week; the average price in the last week was 15*s*., against 14*s*. 3*d*. in the corresponding week of last year.

The average prices of potatoes for the past quarter at the Dublin Potato Market were 3*s*. 8*d*. to 5*s*. 2*d*., being much higher than the average prices for the corresponding quarter of last year, viz., 2*s*. 8*d*. to 4*s*.

The average price of inferior beef at the Dublin Cattle Market during the third quarter of the present year, was 52*s*., which was lower than the average price (56*s*. 6*d*.) for the corresponding quarter of 1865; best beef, however, was higher during the third quarter of 1866 than in the third quarter of 1865, the average price for the former being 69*s*. 6*d*., and for the latter 67*s*. 6*d*.

The average number of persons in Ireland receiving in-door relief on Saturdays during the third quarter of the present year was 44,980, against 46,632 for the corresponding period of 1865.

The average weekly number of persons receiving out-door relief during the quarter was 10,870, against 9,093 for the third quarter of 1865.

Of the persons receiving in-door relief during the third quarter of the present year an average number of 451 in each week were located in asylums for the blind and the deaf and dumb, and in extern hospitals; in the corresponding quarter of 1865 the average weekly number was 463.

THE WEATHER.—The following meteorological observations, taken at the Ordnance Survey Office,* Phœnix Park, Dublin, during the third quarter of the years 1864, 1865, and 1866, respectively, have been obligingly furnished by Captain Wilkinson, R.E., by direction of the Superintendent of the Ordnance Survey.

The mean height of the barometer during the third quarter of the present year was 29·628 inches (in the corresponding quarter of 1865 and 1864 it was 29·820 inches, and 29·804 inches respectively); the highest reading (30·186 inches) was on the 10th July, at 9·30 P.M., when the air was calm; and the lowest (28·946 inches) on the 7th August, at 9·30 A.M., wind S.W.

The mean temperature of the air during the quarter was 56·9° (it was 60·8°, in the corresponding quarter of last year, and 57·8° in the third quarter of 1864); the maximum temperature (80·7°) was on the 13th July, and the minimum (31·8°) was on the 29th September.

Rain or snow fell on 56 days during the quarter. The rain-fall measured 6·656 inches; it was 6·318 inches in the third quarter of last year, and 4·137 inches in the corresponding quarter of 1864. The total rain-fall during the half-year ended 30th September last, was 14·452 inches, against 12·134 inches and 8·220 inches during the corresponding period of 1865 and 1864, respectively. The greatest monthly rain-fall in the third quarter of the present year was in September, when 2·988 inches were registered.

The prevailing winds during the quarter were westerly, the wind having been from W. on 27 days; from S.W. on 32 days; and from N.W. on 11 days, at 9·30 A.M. It was calm on 6 days at that hour.

July.—The mean height of the barometer in this month was 29·818 inches; the highest reading (30·186 inches) was on the 10th, at 9·30 P.M., wind calm; the lowest (29·106 inches) was on the 3rd, at 3·30 P.M., wind S.W. The mean temperature of the air was 60·1°; the maximum was 80·7°, and the minimum was 42°. The 13th was the warmest day, and the 2nd was the coldest night. The mean of the dry bulb was 64·1°, and of the wet bulb, 59·2. The maximum heat in sun was 108·5°, and the minimum on grass 41·3°. The maximum ozone was ·9, the minimum ·1, and the mean ·5. Rain or snow fell on 12 days. The rain-fall measured 1·493 inches; the greatest amount in 24 hours (·547 of an inch) fell on the 5th. The wind blew on 15 days from S.W.; on 8 days from W.; on 4 days from N.W.; on 1 day from N.E.; and on 1 day from E., at 9·30 A.M. It was calm on 2 days at that hour.

August.—During this month the mean height of the barometer was 29·617 inches; the highest reading (29·938 inches) was on the 11th, at 9·30 A.M., wind W.; and the lowest (28·946 inches) on the 7th, at 9·30 A.M., wind S.W. The mean temperature of the air was 57·9°; the maximum was 73·9, and the minimum 40·5°. The 24th was the warmest day, and the 17th was the coldest night. The mean of the dry bulb was 58·6°, and of the wet bulb 54·7°. The maximum heat in sun was 94·0°, and the minimum on grass 38·5°. The maximum ozone was 1·0; the minimum was ·2; and the mean ·6. Rain or snow fell on 21 days. The rain-fall measured 2·175 inches; the greatest amount in 24 hours being ·440 of an inch, on the 1st. The wind blew on 10 days from W.; on 9 days from S.W.; and on 6 days from N.W., at 9·30 A.M. It was calm on 1 day at that hour.

September.—The mean height of the barometer in this month was 29·450 inches;

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* Latitude 53° 21′ 44″·65 north, longitude 6° 21′ 6″·35 west. Height above the sea 158·8 feet. From the 1st January, 1865, inclusive, the barometer has been corrected for altitude, as well as reduced to 32° Fahrenheit.

the highest reading (30·060 inches) was on the 30th, at 9·30 P.M., wind calm; and the lowest (28·982 inches) on the 10th, at 9·30 A.M., wind S. The mean temperature of the air was 52·8°; the maximum was 66·9°; and the minimum 31·8°. The 1st and 4th were the warmest days, and the 29th the coldest night. The mean of the dry bulb was 53·5°, and of the wet bulb 51·0°. The maximum heat in sun was 87·0°, and the minimum on grass 30·1°. The temperature on grass was below 32° on the nights of the 22nd and 29th. The maximum ozone was ·9, the minimum ·2, and the mean ·5. Rain or snow fell on 23 days. The rain-fall measured 2·988 inches; the greatest amount in 24 hours was ·582 of an inch, on the 6th. The wind blew on 9 days from W.; on 8 days from S.W.; on 3 days from S.; and on 3 days from S.E., at 9·30 A.M. It was calm on 3 days at that hour.

Meteorological Observations taken at the Ordnance Survey Office, Phœnix Park, Dublin.

Months.	Barometer.			Thermometer.			Rain-fall.
	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	
	Inches.	Inches.	Inches.	°	°	°	Inches.
July, 1864	30·097	29·304	29·796	80·9	40·5	60·6	·964
" '65	30·237	29·411	29·741	79·7	42·8	61·4	2·006
" '66	30·186	29·106	29·818	80·7	42·0	60·1	1·493
Aug., 1864	30·371	29·383	29·936	81·4	33·0	57·1	1·301
" '65	30·191	29·187	29·681	77·8	40·0	59·9	4·200
" '66	29·938	28·946	29·617	73·9	40·5	57·9	2·175
Sept., 1864	30·240	29·081	29·679	71·2	37·4	55·8	1·872
" '65	30·487	29·579	30·039	81·6	36·5	61·1	·103
" '66	30·060	28·982	29·450	66·9	31·8	52·8	2·988
							Total.
Mean, 3rd qr., 1864	30·236	29·256	29·804	77·8	37·0	57·8	4·137
" '65	30·305	29·392	29·820	79·7	39·8	60·8	6·318
" '66	30·061	29·011	29·628	73·8	38·1	56·9	6·656

Months.	Direction of the Wind at 9·30 A.M. Number of Days on which the Wind blew from the								Calm at 9·30 A.M.
	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	
July, 1864	2	7	1	—	3	6	10	2	—
" '65	—	—	2	3	5	7	10	4	—
" '66	—	1	1	—	—	15	8	4	2
Aug., 1864	4	3	7	—	2	6	6	3	—
" '65	3	—	6	—	1	7	11	3	—
" '66	1	1	—	2	1	9	10	6	1
Sept., 1864	1	1	2	1	1	15	8	1	—
" '65	—	—	7	1	1	12	6	—	3
" '66	—	1	2	3	3	8	9	1	3
Total, 3rd qr., 1864	7	11	10	1	6	27	24	6	—
" '65	3	—	15	4	7	26	27	7	3
" '66	1	3	3	5	4	32	27	11	6

HEALTH OF THE PEOPLE.—Notwithstanding the outbreak of cholera in various parts of the country, the deaths *registered* during the past quarter were 103 less than the number *registered* during the corresponding quarter of last year.

Though this decreased mortality may to a certain degree be attributable to a diminution of zymotic disease, yet it is to be feared that much of the decrease must be referred to imperfect registration, particularly in the western, north-western, and north-midland divisions.

Fever, though prevalent in some districts, was generally of a mild type, and caused comparatively few deaths.

Deaths from scarlatina of a malignant nature were reported from various districts, especially Carrickfergus, Castlederg, Lurgan, Bailieborough, and Lucan. The registrar of Ballinakill, superintendent registrar's district of Abbeyleix, reports 14 deaths from scarlatina; he makes the following statement:—"I have been for over thirty years the medical officer of Ballinakill Dispensary, but never experienced so bad a type of scarlatina as the present epidemic afforded." At Kilrush, 12 deaths from scarlatina were reported. In many districts this disease had disappeared, or very much decreased, especially in those localities where attention had been paid to sanitary precautions.

About thirty registrars reported cases of cholera having occurred in their districts; in nearly every instance those who were first attacked by the disease had been recently in localities where cholera abounded. Reapers and labourers arriving from England were attacked in various parts of the country; and generally speaking, the disease was not confined to the individual first attacked, but spread to the other inmates of the house. In Mallow, where 26 deaths from cholera took place during the quarter, the registrar states that "the greater number of cases occurred in the locality of a well, the water of which was in daily use by the people dwelling in its neighbourhood. This water has been since analyzed by Professor Cameron, of Dublin. His opinion is that the water is not suitable for consumption, in consequence of its containing a very large amount of organic matter derived from animal sources."

The registrar of the Carrick-on-Suir district, who had so frequently reported on the unsatisfactory sanitary condition of his district, makes the following statement:—"The health of this district is at present most satisfactory. The sanitary condition of the town is now being improved, owing to the exertions of the town commissioners since the 'Sanitary Act, 1866,' came into force." The registrar of Milltown Malbay, superintendent registrar's district of Ennistimon, testifies to the advantages of sanitary improvements; referring to the disappearance or subsidence of fever and scarlatina in his district, he observes:—"More perfectly organized sanitary arrangements have confessedly brought about this disappearance of diseases, epidemic or endemic."

Whooping-cough was very prevalent and very fatal in the Cavan union.

A death from hydrophobia took place in the Clady district, Londonderry union; and in the Boherboy district, Kanturk union, a child 16 months old died from the same cause.

The ages of 3 women who died at Oranmore, Galway union, were stated to have been 86, 90, and 102 respectively. In the Ballynacally district, Killadysert union, the deaths of 6 persons, aged between 80 and 101, are reported. In Tobercurry, 5 deaths from old age are reported, including a sailor 106 years old, "who served under Lord Nelson at Trafalgar."

Births, Deaths, and Marriages in each Division of Ireland.

Divisions.	Area in Statute Acres.	Population in 1861.	June Quarter, 1866. — Marriages.	September Quarter, 1866.	
				Births.	Deaths.
I. North-Eastern	2,328,305	1,124,041	1,651	7,578	3,960
II. North-Western	2,392,501	574,745	525	3,014	1,472
III. Eastern	1,993,016	829,569	1,220	4,781	3,691
IV. North Midland	2,019,408	575,289	443	3,054	1,522
V. South Midland	2,361,709	515,272	397	2,404	1,704
VI. Western	4,088,459	822,878	565	5,006	1,960
VII. South-Eastern	1,826,172	500,957	463	2,645	1,846
VIII. South-Western	3,313,071	855,813	781	5,098	2,596
Total of Ireland....	20,322,641	5,798,967	6,045	33,580	18,751

No. IV.—GREAT BRITAIN AND IRELAND.

SUMMARY *of* MARRIAGES, *in the Quarter ended* 30*th June*, 1866; *and* BIRTHS *and* DEATHS, *in the Quarter ended* 30*th September* 1866.

COUNTRIES.	AREA in Statute Acres.	POPULATION, 1861. (*Persons.*)	Marriages.	Births.	Deaths.
		No.	No.	No.	No.
England and Wales	37,324,883	20,066,224	48,523	178,982	116,826
Scotland	19,639,377	3,062,294	6,019	27,197	15,451
Ireland	20,322,641	5,798,967	6,045	33,580	18,751
GREAT BRITAIN AND IRELAND	77,286,901	28,927,485	60,587	239,759	151,028

de of United Kingdom, 1866-65-64.—*Distribution of* Exports *from United Kingdom, cording to the Declared Real Value of the Exports; and the Computed Real Value* (*Ex-duty*) Imports *at Port of Entry, and therefore including Freight and Importer's Profit.*

Merchandise (*excluding Gold and Silver*), Imported from, and Exported to, the following Foreign Countries, &c. [000's omitted.]	First Six Months.					
	1866.		1865.		1864.	
	Imports from	*Exports to*	Imports from	*Exports to*	Imports from	*Exports to*
I.—FOREIGN COUNTRIES:	£	£	£	£	£	£
rthern Europe; viz., Russia, Sweden, orway, Denmark & Iceland, & Heligoland	7,329,	2,379,	5,719,	2,102,	6,089,	2,317,
tral Europe; viz., Prussia, Germany, he Hanse Towns, Holland, and Belgium	16,257,	13,502,	14,028,	12,007,	13,268,	11,343,
stern Europe; viz., France, Portugal with Azores, Madeira, &c.), and Spain with Gibraltar and Canaries)	23,249,	8,142,	16,037,	7,189,	17,091,	7,047,
uthern Europe; viz., Italy, Austrian Empire, Greece, Ionian Islands, and Malta	3,020,	3,760,	1,950,	3,719,	1,715,	3,928,
vant; viz., Turkey, with Wallachia and Moldavia, Syria and Palestine, and Egypt	10,619,	8,944,	11,470,	5,627,	13,633,	7,026,
rthern Africa; viz., Tripoli, Tunis, Algeria and Morocco	205,	171,	146,	97,	160,	79,
estern Africa	487,	289,	427,	280,	372,	242,
stern Africa; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Mooria Islands	66,	132,	62,	35,	28,	24,
dian Seas, Siam, Sumatra, Java, Philippines; other Islands	325,	1,243,	836,	996,	358,	961,
uth Sea Islands	44,	100,	8,	26,	—	44,
ina, including **Hong Kong**	5,831,	4,817,	6,024,	3,215,	9,508,	2,471,
nited States of America	30,839,	15,228,	4,339,	6,215,	8,509,	12,027,
exico and Central America	293,	626,	2,281,	1,193,	2,132,	823,
reign West Indies and Hayti	1,321,	1,478,	2,022,	1,658,	2,582,	1,537,
uth America (Northern), New Granada, Venezuela, and Ecuador	941,	1,609,	795,	1,417,	872,	1,079,
" **(Pacific)**, Peru, Bolivia, Chili, and Patagonia	2,685,	1,147,	3,312,	1,604,	2,603,	1,499,
" **(Atlantic)** Brazil, Uruguay, and Buenos Ayres	5,096,	5,851,	3,346,	4,007,	4,440,	4,029,
hale Fisheries; Grnlnd., Davis, Straits, Southn. Whale Fishery, & Falkland Islands	9,	9,	7,	4,	25,	12,
Total—Foreign Countries	108,616,	69,427,	72,809,	51,391,	83,385,	56,488,
II.—BRITISH POSSESSIONS:						
ritish India, Ceylon, and Singapore	18,520,	10,842,	11,607,	11,191,	22,837,	10,229,
ustral. Cols.—New South Wales and Victoria	4,679,	4,566,	3,640,	4,407,	2,580,	3,602,
" " So. Aus., W. Aus., Tasm., and N. Zealand	1,545,	2,203,	1,179,	1,918,	1,170,	1,522,
ritish North America	820,	2,969,	869,	1,705,	1,251,	2,385,
" W. Indies with Btsh. Guiana & Honduras	2,719,	1,385,	3,887,	1,493,	5,306,	1,853,
ape and Natal	953,	589,	975,	1,097,	814,	921,
rt. W. Co. of Af., Ascension and St. Helena	240,	311,	227,	204,	116,	142,
lauritius	1,054,	302,	630,	822,	960,	338,
hannel Islands	232,	264,	194,	401,	388,	567,
Total—British Possessions	30,762,	23,431,	23,208,	22,738,	35,423,	21,559,
General Total ....£	139,378,	92,858,	96,017,	74,129,	118,807,	78,047,

IMPORTS.—(United Kingdom.)—First Eight Months (*January—August*), 1866-65-64-63-62.—*Computed Real Value* (*Ex-duty*), *at Port of Entry* (*and therefore including Freight and Importer's Profit*), *of Articles of Foreign and Colonial Merchandise Imported into the United Kingdom.*

(First Eight Months.) [000's omitted.] FOREIGN ARTICLES IMPORTED.		1866.	1865.	1864.	1863.	1862.
		£	£	£	£	£
RAW MATLS.—*Textile.*	Cotton Wool	58,205,	29,944,	50,504,	26,862,	11,655,
	Wool (Sheep's)..	12,559,	10,388,	10,789,	7,921,	7,333,
	Silk	9,168,	9,541,	7,434,	9,502,	9,764,
	Flax	3,005,	3,048,	3,856,	2,262,	2,664,
	Hemp	2,182,	1,546,	2,934,	1,796,	1,336,
	Indigo	1,851,	1,757,	1,777,	1,926,	2,151,
		86,970,	56,224,	77,294,	50,269,	34,903.
" " *Various.*	Hides	1,979,	1,634,	1,604,	1,868,	1,681,
	Oils	2,532,	2,206,	1,849,	2,512,	2,164,
	Metals	3,218,	2,724,	2,828,	2,345,	2,507,
	Tallow	1,233,	851,	711,	858,	996,
	Timber................	4,564,	6,213,	5,523,	5,669,	4,908,
		13,526,	13,628,	12,515,	13,247,	12,555,
" " *Agrcltl.*	Guano	921,	1,686,	756,	2,022,	518,
	Seeds	1,694,	2,066,	2,138,	1,880,	1,413,
		2,615,	3,752,	2,894,	3,902,	1,931,
TROPICAL, &c., PRODUCE.	Tea	6,091,	5,287,	5,435,	6,670,	5,652,
	Coffee	2,457,	2,566,	2,254,	2,557,	2,379,
	Sugar & Molasses	8,756,	8,341,	11,336,	9,707,	8,892,
	Tobacco	1,229,	1,514,	1,390,	1,059,	673,
	Rice	449,	357,	588,	772,	1,266,
	Fruits	89,	201,	115,	153,	185,
	Wines	3,335,	2,456,	3,731,	2,874,	2,468,
	Spirits	1,294,	1,011,	1,544,	1,207,	1,078,
		23,700,	21,733,	26,393,	24,999,	22,593,
FOOD	Grain and Meal.	18,898,	11,168,	12,601,	17,605,	23,233,
	Provisions	6,210,	6,061,	5,753,	5,230,	5,090,
		25,108,	17,229,	18,354,	22,835,	28,323,
Remainder of Enumerated Articles		3,893,	3,104,	3,562,	2,806,	2,379,
TOTAL ENUMERATED IMPORTS		155,812,	115,670,	141,012,	118,058,	102,684,
Add for UNENUMERATED IMPORTS (say)		38,953,	28,917,	35,253,	29,514,	25,671,
TOTAL IMPORTS		194,765,	144,587,	176,265,	147,572,	128,355,

EXPORTS.—(United Kingdom.)—First Nine Months (*January—September*), 1866-65-64-63-62.—*Declared Real Value, at Port of Shipment, of Articles of* BRITISH *and* IRISH *Produce and Manufactures Exported from United Kingdom.*

(First Nine Months.) [000's omitted.] BRITISH PRODUCE, &c., EXPORTED.		1866.	1865.	1864.	1863.	1862.
		£	£	£	£	£
MANFRS.—*Textile.*	Cotton Manufactures ..	46,100,	33,628,	35,648,	27,192,	24,769,
	„ Yarn	9,927,	7,311,	7,278,	5,463,	5,297,
	Woollen Manufactures	16,790,	14,484,	14,915,	10,973,	9,698,
	„ Yarn	3,290,	3,984,	4,214,	3,702,	2,753,
	Silk Manufactures........	1,349,	1,445,	1,605,	1,503,	1,547,
	„ Yarn	173,	214,	199,	215,	254,
	Linen Manufactures	7,260,	6,464,	6,123,	4,556,	3,666,
	„ Yarn	1,745,	1,806,	2,387,	1,775,	1,353,
		86,634,	69,336,	72,369,	55,378,	49,337,
„ *Sewed.*	Apparel	2,046,	1,831,	1,801,	1,935,	1,609,
	Haberdy. and Mllnry.	4,308,	3,644,	3,793,	3,131,	2,689,
		6,354,	5,475,	5,594,	5,066,	4,298,
METALS	Hardware	3,310,	3,138,	3,082,	2,669,	2,391,
	Machinery......................	3,354,	3,862,	3,363,	3,031,	2,951,
	Iron	11,289,	9,666,	10,393,	9,676,	8,364,
	Copper and Brass........	2,203,	2,389,	2,677,	3,072,	2,141,
	Lead and Tin	2,559,	2,058,	2,241,	2,188,	2,130,
	Coals and Culm	3,859,	3,306,	3,100,	2,768,	2,892,
		26,574,	24,419,	24,856,	23,354,	20,869,
Ceramic Manufcts.	Earthenware and Glass	1,821,	1,612,	1,620,	1,537,	1,359,
Indigenous Mnfrs.	Beer and Ale................	1,553,	1,590,	1,283,	1,285,	1,124,
	Butter	265,	216,	234,	362,	262,
	Cheese	126,	74,	118,	106,	87,
	Candles	176,	77,	100,	156,	169,
	Salt	298,	194,	225,	235,	248,
	Spirits	117,	205,	447,	348,	368,
	Soda	1,163,	804,	686,	666,	682,
		3,698,	3,160,	3,088,	3,159,	2,940,
Various Manufcts.	Books, Printed	439,	359,	327,	323,	296,
	Furniture	175,	220,	185,	216,	183,
	Leather Manufactures	1,423,	1,834,	1,756,	1,674,	1,859,
	Soap	170,	133,	178,	193,	174,
	Plate and Watches	308,	304,	302,	344,	353,
	Stationery	279,	291,	253,	246,	199,
		2,794,	3,141,	3,001,	2,996,	3,064,
Remainder of Enumerated Articles		7,789,	7,085,	7,238,	6,404,	6,181,
Unenumerated Articles................................		6,273,	5,490,	5,638,	6,403,	5,624,
TOTAL EXPORTS.....................		141,937,	119,717,	123,404,	104,296,	93,672,

SHIPPING.—Foreign Trade.—(United Kingdom.)—First Nine Months (*January—September*), 1866-65-64-63.—*Vessels Entered and Cleared with Cargoes including repeated Voyages, but excluding Government Transports.*

(First Nine Months.)	1866.			1865.		1864.		1863.	
Entered :—	Vessels.	Tonnage (000's omitted.)	Average Tonnage.	Vessels.	Tonnage (000's omitted.)	Vessels.	Tonnage (000's omitted.)	Vessels.	Tonnage (000's omitted.)
Vessels belonging to—	No.	Tons.	Tons.	No.	Tons.	No.	Tons.	No.	Tons
Russia	350	123,	351	379	124,	536	182,	301	91,
Sweden	858	158,	182	798	140,	1,008	156,	803	126,
Norway	2,984	696,	233	2,751	632,	3,017	631,	2,632	577,
Denmark	1,669	179,	107	1,652	169,	2,129	207,	2,305	218,
Prussia and Ger. Sts.	3,197	768,	240	2,817	645,	1,529	395,	2,992	716,
Holland and Belgium	1,624	219,	135	1,550	211,	1,380	193,	1,320	188,
France	2,297	212,	92	2,207	193,	1,784	143,	1,982	162,
Spain and Portugal	291	90,	309	325	102,	344	103,	284	87,
Italy & other Eupn. Sts.	915	267,	292	815	233,	608	171,	703	200,
United States	342	357,	1,044	229	248,	349	383,	563	566,
All other States	12	4,	333	21	6,	13	5,	11	3,
	14,539	3,073,	211	13,544	2,703,	12,697	2,569,	13,896	2,996,
United Kingdm. & Depds.	20,275	6,837,	337	18,474	5,889,	18,407	5,679,	17,139	5,209,
Totals Entered	34,814	9,910,	285	32,018	8,592,	31,104	8,248,	31,035	8,145,
Cleared :—									
Russia	315	115,	365	323	112,	425	162,	291	86,
Sweden	788	142,	180	681	111,	885	134,	789	121,
Norway	1,654	323,	195	1,444	274,	1,818	318,	1,451	252,
Denmark	1,689	179,	106	1,807	185,	2,166	209,	2,600	247,
Prussia and Ger. Sts.	4,109	847,	206	3,932	786,	2,298	490,	4,179	829,
Holland and Belgium	1,565	255,	163	1,765	270,	1,385	214,	1,438	220,
France	3,123	329,	105	3,069	311,	3,333	330,	3,438	326,
Spain and Portugal	294	92,	313	329	100,	330	99,	290	94,
Italy & other Eupn. Sts.	991	318,	320	968	307,	854	256,	713	214,
United States	413	411,	995	258	261,	326	353,	515	531,
All other States	21	8,	395	31	7,	23	8,	19	6,
	14,962	3,019,	202	14,607	2,724,	13,843	2,573,	15,723	2,926,
United Kingdm. & Depds.	23,054	7,628,	331	22,198	6,861,	22,250	6,657,	21,707	6,063,
Totals Cleared	38,016	10,647,	280	36,805	9,585,	36,093,	9,230,	37,430	9,009,

GOLD AND SILVER BULLION AND SPECIE.—IMPORTED AND EXPORTED.—(United Kingdom.)—*Computed Real Value for the* First Nine Months (*January—September*), 1866-65-64.

[000's omitted.]

(First Nine Months.)	1866.		1865.		1864.	
	Gold.	*Silver.*	Gold.	*Silver.*	Gold.	*Silver.*
Imported from:—	£	£	£	£	£	£
Australia	4,639,	1,	2,155,	—	2,422,	—
So. Amca. and W. Indies	1,694,	3,231,	2,041,	3,711,	4,183,	5,779,
United States and Cal.	7,847,	1,452,	3,258,	119,	5,168,	101,
	14,180,	4,684,	7,454,	3,830,	11,773,	5,880,
France	2,637,	2,073,	290,	658,	118,	897,
Hanse Towns, Holl. & Belg.	759,	865,	122,	83,	210,	2,062,
Prtgl., Spain, and Gbrltr.	477,	115,	668,	80,	114,	68,
Mlta., Trky., and Egypt	247,	9,	281,	—	35,	1,
China	—	—	—	—	—	—
West Coast of Africa	86,	16,	79,	18,	68,	16,
All other Countries	1,417,	561,	749,	109,	263,	133,
Totals Imported	19,803,	8,323,	9,643,	4,778,	12,581,	9,057,
Exported to:—						
France	7,929,	1,504,	2,503,	586,	5,425,	1,935,
Hanse Towns, Holl. & Belg.	1,022,	1,809,	269,	1,956,	78,	635,
Prtgl., Spain, and Gbrltr.	158,	107,	1,485,	—	1,566,	29,
	9,109,	3,420,	4,257,	2,542,	7,069,	2,599,
Ind. and China (viâ Egypt)	345,	2,443,	275,	1,724,	1,638,	5,188,
Danish West Indies	—	—	—	—	—	—
United States	1,005,	—	20,	—	183,	5,
South Africa	5,	—	19,	—	111,	—
Mauritius	—	—	—	—	—	—
Brazil	816,	64,	465,	80,	916,	115,
All other Countries	456,	850,	446,	78,	375,	206,
Totals Exported	11,736,	6,777,	5,482,	4,424,	10,292,	8,113,
Excess of *Imports*	8,067,	1,546,	4,161,	354,	2,289,	449,
,, Exports	—	—	—	—	—	—

REVENUE.—(UNITED KINGDOM.)—30TH SEPTEMBER, 1866-65-64-63.

Net Produce in YEARS *and* QUARTERS *ended 30th* SEPT., 1866-65-64-63.

[000's omitted.]

QUARTERS, ended 30th Sept.	1866.	1865.	1866.		Corresponding Quarters.	
			Less.	More.	1864.	1863.
	£	£	£	£	£	£
Customs	5,541,	5,289,	—	252,	5,624,	5,872,
Excise	4,520,	4,332,	—	188,	4,352,	3,922,
Stamps	2,075,	2,272,	197,	—	2,267,	2,191,
Taxes	243,	242,	—	1,	168,	176,
Post Office	1,160,	1,145,	—	15,	1,045,	906,
	13,539,	13,280,	197,	456,	13,456,	13,066,
Property Tax	633,	815,	182,	—	782,	866,
	14,172,	14,095,	379,	456,	14,238,	13,932,
Crown Lands	71,	70,	—	1,	69,	68,
Miscellaneous	953,	297,	—	656,	485,	411,
Totals	15,196,	14,462,	379,	1,113,	14,792,	14,411,
			NET INCR. £733,706			

YEARS, ended 30th Sept.	1866.	1865.	1866.		Corresponding Years.	
			Less.	More.	1864.	1863.
	£	£	£	£	£	£
Customs	21,621,	21,969,	348,	—	22,573,	23,771,
Excise	20,255,	19,539,	—	716,	19,096,	16,992,
Stamps	9,356,	9,486,	130,	—	9,538,	9,146,
Taxes	3,422,	3,341,	—	81,	3,252,	3,193,
Post Office	4,365,	4,210,	—	155,	3,960,	3,760,
	59,019,	58,545,	478,	952,	58,419,	56,862,
Property Tax	5,595,	7,732,	2,137,	—	8,551,	10,605,
	64,614,	66,277,	2,615,	952,	66,970,	67,467,
Crown Lands	322,	312,	—	10,	307,	301,
Miscellaneous	3,524,	2,670,	—	854,	3,097,	2,726,
Totals	68,460,	69,259,	2,615,	1,816,	70,374,	70,494,
			NET DECR. £798,517			

REVENUE.—UNITED KINGDOM.—QUARTER ENDED 30TH SEPTEMBER, 1866 :—

An Account showing the REVENUE *and other* RECEIPTS *of the* QUARTER *ended 30th September,* 1866 ; *the* APPLICATION *of the same, and the Charge of the Consolidated Fund for the said Quarter, together with the Surplus or Deficiency upon such Charge.*

Received:—

Surplus Balance beyond the Charge of the *Consolidated Fund* for the Quarter ended 30th June, 1866, viz.:—		£
Great Britain	—	
Ireland	£838,002	
		888,002
Income received, as shown in Account I		15,196,098
Amount received for Exchequer Bills issued to replace Bills paid off in money		317,000
Amount received in repayment of Advances for Public Works, &c.		526,769
Ditto, for New Courts of Justice		115,000
		£16,992,869
Balance, being the Deficiency on 30th September, 1866, upon the charge of the Consolidated Fund in Great Britain, to meet the Dividends and other charges payable in the Quarter to 31st December, 1866, and for which Exchequer Bills (Deficiency) will be issued in that Quarter		3,121,893
		£20,114,762

Paid:—

Amount applied out of the Income in Redemption of Deficiency Bills issued in the Quarter to 30th September 1866, for the charge of the Consolidated Fund in Great Britain on 30th June, 1866, viz.:—		£
Total deficiency	£3,513,865	
Deduct amount redeemed with Sinking Fund	233,000	
		3,280,865
Amount applied out of the Income to *Supply Services*		9,013,027
„ advanced for New Courts of Justice		110,000
Charge of the *Consolidated Fund* for the Quarter ended 30th September, 1866, viz.:—		
Interest of the Permanent Debt	£5,377,784	
Terminable Debt	954,858	
Principal of Exchequer Bills	9,500	
Interest of „	83,873	
„ Deficiency Bills	448	
The Civil List	101,526	
Other Charges on Consolidated Fund	379,296	
Advances for Public Works, &c.	519,213	
Sinking Fund	89,818	
		7,466,816
Surplus Balance in Ireland beyond the Charge of the Consolidated Fund in Ireland for the Quarter ended 30th September, 1866		244,554
		£20,114,762

BRITISH CORN.—*Gazette Average Prices* (England and Wales), *Third Quarter of* 1866.

[This Table is communicated by the Statistical and Corn Department, Board of Trade.]

Weeks ended on a Saturday, 1866.	Weekly Average. (Per Impl. Quarter.)					
	Wheat.		Barley.		Oats.	
	s.	d.	s.	d.	s.	d.
July 7	54	6	35	5	27	7
„ 14	55	10	35	1	27	7
„ 21	54	–	33	5	26	2
„ 28	52	–	33	10	27	1
Average for July	54	1	34	5	27	1
August 4	51	1	32	11	25	3
„ 11	50	2	35	2	26	6
„ 18	50	2	34	9	26	6
„ 25	50	10	33	8	26	6
Average for August	50	7	34	1	26	2
Sept. 1	49	7	35	1	25	3
„ 8	47	3	36	1	25	2
„ 15	47	–	37	1	24	8
„ 22	49	8	37	10	24	1
„ 29	51	5	40	1	24	3
Average for September	49	–	37	3	24	8
Average for the quarter	51	–	35	5	25	10

RAILWAYS.—Prices, *July—September;—and* Traffic, *January—September*, 1866.

Total Capital Ex-pended Mlns.	Railway.	For the (£100). Price on			Miles Open.		Total Traffic. first 39 Weeks. (000's omitted.)		Traffic pr. Mile pr. Wk. 39 Weeks.		Dividends per Cent. for Half Years.		
		1st Sept.	1st Aug.	2nd July.	'66.	'65.	'66.	'65.	'66.	'65.	30 June, '66.	31 Dec. '65.	30 Jun. '65.
£					No.	No.	£	£	£	£	s. d.	s. d.	s. d.
53,9	Lond.&N.Westn.	123	113½	116¼	1,306	1,294	4,579,	4,406,	99	96	60 –	72 6	60 –
48,2	Great Western	60	53¼	50½	1,292	1,280	2,902,	2,782,	60	57	20 –	20 –	20 –
19,4	„ Northern...	122	122	121½	422	404	1,461,	1,405,	94	94	50 –	87 6	55 –
23,8	„ Eastern	32½	31	34½	709	727	1,366,	1,359,	52	52	Nil	Nil	10 –
15,4	Brighton	92	93	92	294	272	874,	831,	86	93	40 –	65 –	50 –
19,4	South-Eastern	72	69	69	330	315	991,	977,	86	85	28 9	45 –	25 –
16,8	„ Western....	88	93	92½	500	490	—	—	57	59	40 –	55 –	45 –
196,9		84½	82⅛	82¼	4,853	4,782	12,173,	11,760,	76	76	34 1	49 3	38 –
27,1	Midland	125	125¾	124¼	677	677	1,985,	1,858,	82	76	60 –	70 –	65 –
21,5	Lancsh.and York.	127	125	121½	403	403	1,785,	1,597,	118	109	67 6	62 6	55 –
14,6	Sheffield and Man.	61½	58	58½	246	246	5,535,	734,	91	81	20 –	35 –	10 –
37,8	North-Eastern	110	109	110	1,221	1,199	2,736,	2,585,	63	62	55 –	65 –	55 –
101,0		105¾	104⅜	103½	2,547	2,525	12,041,	6,774,	88	82	48 1	58 1	38 9
18,9	Caledonian	130	123	127	561	561	1,157,	1,102,	65	63	72 6	75 –	67 6
6,1	Gt.S.&Wn.Irlnd.	94	93	—	419	387	—	—	28	26	50 –	50 –	45 –
322,9	*Gen. aver.*	95⅛	93	93	8,380	8,255,	25,371,	19,636,	75	73	42 7	54 –	43 3

Consols.—Money Prices, 1*st Sep.*, 89⅞ to ½ (de.).—1*st Aug.*, 88⅛ to ¼ (de.).—2*nd July*, 86½ to ⅜ (de.)
Exchequer Bills.—1*st Sept*, 5*s*. dis. to par.—1*st Aug*, 4*s*. dis. to par.—2*nd July*, 8*s*. dis. to par

BANK OF ENGLAND.—WEEKLY RETURN.

***Pursuant to the Act 7th and 8th Victoria, c.* 32 (1844), *for Wednesday in each Week, during the* THIRD QUARTER (*July—September*) *of* 1866.**

[0,000's omitted.]

1	2	3	4	5	6	7
ISSUE DEPARTMENT.					COLLATERAL COLUMNS.	
Liabilities.	DATES.	Assets.				
Notes Issued.	(Wednesdays.)	Government Debt.	Other Securities.	Gold Coin and Bullion.	Notes in Hands of Public. (Col. 1 minus col. 16.)	Minimum Rates of Discount at Bank of England.
£ Mlns.	1866.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	1866. Per ann.
29,15	July 4	11,01	3,98	14,15	25,82	12 May 10 p.ct.
28,29	„ 11	11,01	3,98	13,29	25,20	
27,92	„ 18	11,01	3,98	12,92	25,42	
27,89	„ 25	11,01	3,98	12,89	25,26	
27,93	Aug. 1	11,01	3,98	12,93	25,52	
27,77	„ 8	11,01	3,98	12,77	25,04	
28,15	„ 15	11,01	3,98	13,15	24,54	17 Aug. 8 „
28,69	„ 22	11,01	3,98	13,69	24,18	24 „ 7 „
29,73	„ 29	11,01	3,98	14,73	23,90	31 „ 6 „
30,10	Sept. 5	11,01	3,98	15,10	24,22	7 Sept. 5 „
29,89	„ 12 ...	11,01	3,98	14,89	23,47	
30,16	„ 19	11,01	3,98	15,16	23,32	
30,64	„ 26	11,01	3,98	15,64	23,05	28 „ 4½ „

BANKING DEPARTMENT.

8	9	10	11	12	13	14	15	16	17	18
Liabilities.					DATES.	Assets.				Totals of Liabilities and Assets.
Capital and Rest.		Deposits.		Seven Day and other Bills.		Securities.		Reserve.		
Capital.	Rest.	Public.	Private.		(Wdnsdys.)	Government.	Other.	Notes.	Gold and Silver Coin.	
£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	1866.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
14,55	3,61	6,80	19,94	,68	July 4	10,78	30,75	3,33	,73	45,59
14,55	3,64	2,73	21,47	,71	„ 11	10,28	29,04	3,09	,70	43,12
14,55	3,71	2,16	19,82	,75	„ 18	10,03	27,75	2,50	,73	41,00
14,55	3,74	2,52	18,55	,66	„ 25	9,82	26,74	2,63	,82	40,02
14,55	3,77	3,19	17,74	,72	Aug. 1	10,13	26,58	2,41	,86	39,97
14,55	3,79	3,16	17,66	,64	„ 8	10,08	26,16	2,73	,85	39,81
14,55	3,82	3,35	18,12	,69	„ 15	10,71	25,22	3,61	,99	40,55
14,55	3,84	3,41	18,76	,61	„ 22	10,71	24,89	4,51	10,08	41,19
14,55	3,81	4,14	18,47	,60	„ 29	10,71	23,94	5,83	1,10	41,58
14,55	3,99	4,78	17,46	,64	Sept 5	11,23	23,22	5,88	1,10	41,23
14,55	4,00	5,18	17,31	,65	„ 12	11,71	22,48	6,42	1,08	41,70
14,55	4,10	5,55	16,92	,61	„ 19	11,71	22,12	6,84	1,06	41,74
14,55	4,11	6,39	17,02	,58	„ 26	12,22	21,75	7,59	1,09	42,65

CIRCULATION.—COUNTRY BANKS.

Average Amount of Promissory Notes in Circulation in* ENGLAND *and* WALES *on Saturday, in each Week during the* THIRD QUARTER *(July—Sept.) of* 1866; *and in* SCOTLAND *and* IRELAND, *at the Three Dates, as under.

ENGLAND AND WALES.				SCOTLAND.				IRELAND.		
DATES.	Private Banks. (Fixed Issues, 4,03).	Joint Stock Banks. (Fixed Issues, 3,22).	TOTAL. (Fixed Issues, 7,25).	Three Weeks, ended	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 2,75).	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 6,35).
1866.	£ Mlns.	£ Mlns.	£ Mlns.	1866.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
July 7	2,52	2,21	4,73							
„ 14	2,53	2,22	4,76							
„ 21	2,50	2,20	4,70	July 21	1,53	2,83	4,36	2,61	2,48	5,09
„ 28	2,48	2,15	4,63							
Aug. 4	2,49	2,16	4,65							
„ 11	2,51	2,18	4,69							
„ 18	2,50	2,13	4,63	Aug. 18	1,51	2,77	4,28	2,65	2,49	5,14
„ 25	2,48	2,16	4,64							
Sept. 1	2,49	2,16	4,65							
„ 8	2,53	2,18	4,71							
„ 15	2,53	2,21	4,74	Sept. 15	1,50	2,76	4,26	2,65	2,61	5,26
„ 22	2,57	2,25	4,82							
„ 29	2,67	2,30	4,67							

FOREIGN EXCHANGES.—*Quotations as under,* LONDON *on Paris, Hamburg & Calcutta; —and New York, Calcutta, Hong Kong & Sydney, on* LONDON*—with collateral cols.*

1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Paris.				Hamburg.				Calcutta.				
DATES.	London on Paris.	Bullion as arbitrated.		Prem. or Dis. on Gold per mille.	London on Hambg.	Bullion as arbitrated.		New York.	India Council	At Calcutta on London.	Hong Kong.	Sydney.	Standard Silver in bars in London.
		Agnst. Engd.	For Engd.			Agnst. Engd.	For Engd.						
	3 m. d.				3 m. d.			60 d. s.	60 d. s.	6 m. d.	6 m. s.	30 d. s.	pr. oz.
1866.		pr. ct.	pr. ct.			pr. ct.	pr. ct.	pr. ct.	d.	d.	d.	pr. ct.	d.
July 7 ..	25·45	·2	—	par.	13 ·9¼	—	—	168½	—	25	55¼	1½ pm	—
„ 21 ..	„	·3	—	„	·9	—	—	166	22	24¾	„	½ dis	61¼
Aug. 4 ..	·50	·2	—	„	·10½	—	—	161½	„	„ ¼	53¾	½ dis	60¾
„ 18 ..	·57½	—	—	„	·11	—	—	163	„	24	54¼	½ „	„ ⅞
Sept. 1 ..	·52½	·4	—	„	·10½	—	—	157	„ ¼	23¾	55¼	½ dis	„ ⅞
„ 22 ..	·45	—	·2	„	·9	—	—	154¾	„ ¾	„ ¾	52	1½ pm	„ ⅝

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